HISTORY OF THE SOUTH AND WEST WINGS
DESIGN AND CONSTRUCTION
Prepared by the Office of the Curator

THE ARCHITECTS

Ammi B. Young

Ammi Burnham Young was born June 19, 1798 to Captain Samuel and Rebecca Burnham Young in Lebanon, New Hampshire, the oldest of nine children. There is no record of Young receiving any formal education. His father was a carpenter and builder so Young was most likely exposed to construction of buildings and learned that trade at an early age.[1]

His early work consisted of residential and church building. Two early churches attributed to Young are at Norwich, Vermont (1817) and Lebanon, New Hampshire (1828). Also in 1828, Young finished Wentworth Hall, the first of four buildings he designed for Dartmouth College in Hanover, New Hampshire. The second building, Thorton Hall was completed in 1829. Along with a third commission, Reed Hall, built in 1839-1840, these three buildings along with Dartmouth Hall formed "Old Row" at this venerable institution. Young's brother, Ira, a professor of Mathematics and Astronomy helped Ammi secure his last commission for Dartmouth for a brick observatory building.[2]

As of 1831, Young had established offices in Lebanon, New Hampshire and Burlington, Vermont. Typical of architects working in the early to mid nineteenth century, Young's abilities encompassed a variety of disciplines including not only architecture and engineering, but also carpentry, joinery and machinery. He advertised himself as a teacher of architecture and civil engineering capable of producing plans, elevations and models.[3]

His fame and experience spread and in 1831, he was chosen to build his most important project to date, the Vermont State House in Montpelier. In this work, Young's masterful handling of a monumental domed public building, inspired by classical Greek and Roman architecture, was first seen. So successful was this project that when it was completed in 1838, Young received a letter a appreciation from the General Assembly of Vermont praising his skill and perseverance as an architect.[4]

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[1] Lawrence Woodhouse, "Ammi Burnham Young, 1798-1874," Journal of the Society of Architectural Historians, Volume 25, no. 4, December, 1966, p.268

[2] Ibid., p.269

[3] Ibid., p.269

[4] Ibid, p.272

In 1837, Young entered and won a competition for the Boston Custom House, a structure commissioned by the US government. This building continued to expand design concepts set forth in the Vermont State House. Young combined a low Roman dome with a pediment and Grecian Doric order in a cruciform planned structure. Young constructed this monumental building in granite, a material that was readily available from nearby quarries. In addition to its availability, granite was also chosen for its durability and its fireproof characteristics. Young covered the roof of the Boston Custom House with granite tiles, "rendering the building completely fireproof."[5]

His work on the Boston Custom House increased Young's knowledge with regard to the complexities of constructing monumental public buildings. The Custom House took eleven years to complete at a cost of over one million dollars. Upon completion, this building gained national fame, and the reputation of Ammi Young spread. In 1842, during the course of the construction of this building, Young became one of a group of architectural advisors asked by the government to submit plans for individual projects.[6] He remained in the role of architectural advisor for ten years, working to rectify problems with the design and construction of many government projects including custom houses in Charleston, South Carolina and New Orleans. [7]

The Office of Design and Construction

The years in which Young was involved with government building was a time of rapid westward expansion in the country. This expansion facilitated an increasing demand for federal buildings to be built in new territories. However, due to the manner that federal buildings were built in the 1840's and early 1850's, scandal and inefficiency was often the result. Centralized control had not been established for federal building programs and Washington could not effectively exert control and oversight over distant construction projects. Up to this point, the Secretary of the Treasury was responsible for the supervision of construction of a building by working with a local commission and a local architect.

Since it was difficult for the Secretary to actually visit each site, the ability to successfully oversee a project became a problematic issue. This was certainly the case with the custom houses in Savannah and New Orleans. Political infighting between the local population and the federal government resulted in great delays.

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[5] S.A. Drake, Old Landmarks and Historic Personages of Boston, Boston, 1906, p.113.

[6] Lois Craig, The Federal Presence: Architecture, Politics, and National Design (Cambridge: MIT Press, 1978), p.195.

[7] Klock, Lowell, "Ammi B. Young, Supervising Architect of the Treasury, and his 1858 Alexandria Post Office and Customhouse, The Alexandria Chronicle, Vol. 2, No. 2, Summer, 1994, p.2

In 1845, the Secretary of the Treasury had chosen a site and an architect to build the custom house in Savannah. However, neither of these choices met with the approval of the local residents. A steady stream of complaints came from Georgians concerning the inappropriateness of the site and the architect. The site was too close to unsavory locales such as sailors boarding houses and grog shops. The architect was John Norris, a New Yorker, and this did not satisfy the Savannah community who felt that Norris could not capture the spirit "or capacity of our people" with his designs. These complaints were able to sway the Secretary to change the siting of the new custom house, however the architectural services of Norris were retained. This is one example of the type of political infighting that was commonplace with these projects.

In 18__ , Congress appropriated money for plans for the New Orleans Custom House. Again problems of site location and choice of architect disturbed the local community. The level of dissatisfaction was enough to delay the project so that it was not until 1856 that work was begun and the building was not finished until after the Civil War.[8]

Recognizing that there was a need, Treasury Secretary Thomas Corwin recruited Ammi Young because he felt it was necessary to appoint " a professional architect fully acquainted with the details"[9] of construction and architectural design. Corwin thought Young could manage matters of construction and planning exclusively for government projects[10] and Young was appointed as an architect in the Treasury Department on September 29, 1852. [11] Corwin's successor, James Guthrie expanded upon Corwin's idea by creating the Office of Construction in 1853 and Young was given the position of the "Supervising Architect in the Office of Construction."[12]

Young remained the Supervising Architect until July 24, 1862.[13] During these ten years, he, along with Captain Alexander Hamilton Bowman, Engineer in Charge of the Office of Construction (see the following section), were responsible for a prodigious amount of public building design and construction. Young designed over eighty buildings for the Treasury, seventy of which were actually built and initiated the South Wing of the

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[8] Lowry, Bates, Building a National Image: Architectural Drawings for the American Democracy, 1789-1912 (Washington: United Technologies Corp, 1985), p. 50.

[9] Corwin to Ammi B Young, March 4, 1852

[10] Daniel Bluestone, "Civic and Aesthetic Reserve: Ammi Burnham Young's Federal Customhouse Designs" (Winterthur Portfolio, Volume 25, Numbers2/3, Summer/Autumn 1990) p. 132.

[11] Extract from a list of Employees in the Office of Construction

[12] Ibid, p. 51.

[13] Letter to Ammi B. Young, Esq. From S.P. Chase, July 24, 1862

Treasury Building (1855-1861).[14] Young was also involved in the design of the West Wing of the Treasury, but this wing was completed by Young's successor, Isaiah Rogers.

Alexander Hamilton Bowman

Alexander Hamilton Bowman was born on March 30, 1803 to Samuel and Eleanor Teadie Bowman in Wilkes-Barre, Pennsylvania. He received a formal education at the Wilkes-Barre Academy and the United States Military Academy where he graduated in 1825. He entered the engineering corps and was promoted to second lieutenant. At the Military Academy, he also served as an assistant professor of geography, history and ethics.

Between the years of 1826 to 1838, he was involved in several major civil engineering projects including the defenses, improved harbors and rivers at the Gulf of Mexico. He supervised the construction of military highways and worked on improving the navigation of the Cumberland and Tennessee Rivers. Between 1835 and 1853, Bowman, who had been promoted to captain in 1838, was placed in charge of the defenses of the Charleston harbor in South Carolina. During this time he was involved in the construction of Fort Sumter and taught practical military engineering at West Point.[15]

When Treasury Secretary Guthrie created the Bureau of Construction to manage the operations of the expanding federal building program, he felt that it was "necessary that the Department should have at hand, and under its control, an officer of scientific education and practical experience and judgement, to aid it in the supervision and management of business."[16] These qualifications suited Alexander Hamilton Bowman well. Guthrie was impressed by Bowman's background in military engineering. He contacted Jefferson Davis, the Secretary of War in 1854 to request Bowman's service in the newly formed Bureau of Construction. When Davis released Bowman from active military service, Guthrie appointed Bowman as Engineer- in- Charge of the Bureau of Construction.

Bowman and Young at the Office of Design and Construction

The roles of Bowman and Young in the design and construction of the Treasury's building program were significant for several reasons. First, Young and Bowman, created and implemented a systematic framework that enabled the design and construction of an unprecedented number of public buildings in locations throughout the country. Second, Young and Bowman, tasked with designing a fireproof monumental architecture, utilized

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[14] Craig, p.99

[15] National Cyclopedia of American Biography, ed., s.v. "Alexander Hamilton Bowman

[16] James Guthrie to I. Letcher, 4 March 1854, Record Group121, National Archives, Washington DC

the latest in 19th century building technology including the use of wrought iron and cast iron in the construction of their buildings. And third, Young developed an identifiable type of architecture for the mid nineteenth century federal building program.

One of Bowman's major tasks was to increase the efficiency of the building program. He did this by centralizing all activities associated with the design and construction of public buildings into the Bureau of Construction. Plan preparation, specifications, and cost estimates were carried out in this office. The concentration of these activities in this one office proved to very successful as both he and Ammi Young were responsible for one of the largest public building programs in the world at the time. Bowman issued regular progress reports on all Treasury construction projects as well as detailed accounts on the disbursal of funds. These reports introduced a level of accountability in the government building program, where accountability had been lacking.

Bowman and Young were responsible for introducing uniform practices in the design and construction of federal buildings. This created a level of standardization that was necessary for the successful completion of large numbers of buildings. Upon his appointment in 1852, Young became responsible for directing work on twenty-three government owned custom houses and oversaw the construction of fifteen more buildings that were in the course of being built. In the next three years, Young and Bowman were in charge of the construction of forty six additional new public building projects consisting mostly of custom houses, court houses and post offices.[17] Such an ambitious building program could only be accomplished through a framework that insured a consolidation and standardization of construction activities and policies through one office, the newly formed Office of Construction.

Control over all aspects of the building process including site selection, materials, construction methods, design, specifications, cost estimates and contracts were centralized into this office and fell under the jurisdiction of Young and Bowman. One of the major innovations that Ammi Young was responsible for introducing was a uniform standard of building specifications that could be repetitively applied to all the Treasury's newly constructed buildings.[18] This standardized set of specifications determined the type, quantity and grade of materials required, established workmanship levels and outlined building assembly techniques. This singular set of specifications, applied to all government buildings built during this time, insured a common standard for design, construction and workmanship. Such a streamlined system significantly simplified the task of constructing large numbers of buildings. Also, the repetition of a singular successful formula for all new building projects increased efficiency dramatically.

In addition to standardizing specifications, Young also created a basic set of designs for custom houses, court houses and post offices that could be applied to these government

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[17] Lowry, p. 52

[18] Ibid, p.52

building types throughout the country. Associated with this concept, a production innovation attributed to Young was the publishing of building construction drawings as lithograph prints.[19] In this way, drawings could be easily duplicated. Drafting and copying of drawings were significantly reduced and this saved considerable amounts of time and money. Generally nine working drawings were required for each of these projects, and often up to six of these drawings could be used interchangeably on any number of new buildings. Differing programmatic requirements necessitated some variation in plans. Between 1855 and 1856, Young produced designs and specifications for thirty five new buildings. Yet because of the repetitive use of design and detail, only fifteen new designs were required. One design could be used at ten different locations.[20]

Although the design of these buildings was largely predetermined due to the system employed by Young and Bowman, Young was very concerned with the search for an appropriate architectural style for federal buildings. This concern is seen in his exploration of Greek Revival, Palladian, and finally Italianate or Italian Renaissance Pallazo inspired styles.[21] His use of Greek inspired styles can be noted in custom houses located in Cincinnati, Ohio and Norfolk, Virginia designed in 1852, while the influence of Palladian architecture is noted in the identical designs for custom houses in Wilmington, Delaware and Bath, Maine of 1853. [22]

The influence of the Italian Renaissance Palazzo was clearly the most prolific for the majority of Young's designs, especially that group of 35 buildings he designed in 1855-56. The architecture of the Italian Renaissance Palazzo inspired American architects as early as the 1840's as noted in John Notman's work for the Athenaeum in Philadelphia. However by the mid 1850's a large number of picturesque styles were being designed for American buildings. It was Young's keen architectural sense that lead him to adapt the Italianate Renaissance Pallazo form as a suitable expression for the federal building program.

In Young's designs, a sense of classical grandeur considered appropriate for a federal image was maintained, yet these buildings exhibited restraint in the use of excessive and ostentatious detail. Young's Italian Renaissance inspired work of the years 1855-56 can be seen in the similarly designed structures in Buffalo, NY, Oswego, NY Newark, NJ, New Haven, CT, Chicago, IL, Milwaukee, WI and Wheeling, WV. For smaller buildings such

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[19] Lowry, p.53.

[20] Lowry, p.

[21] Hamlin, Talbot, Greek Revival Architecture in America, (New York: Dover Publications, 1964), pp. 106-111.

[22] Moran, Geoffrey, " The Post Office and Custom House at Portsmouth, New Hampshire and Its Architect, Ammi Burnham Young, Old Time New England, Vol. 57, No.4, April-June, 1967, p.96.

as the Post Offices and Custom Houses in Galena, Illinois, Georgetown, DC and Portsmouth, NH, the Italianate Renaissance Palazzo style was also adapted, though decorative details on the exterior were kept to a minimum.

Although Young's designs for the exterior of the buildings maintained a sense of restraint, their interiors exhibited an exuberant ornamentation and attention to detail. Ornamental cast iron was used consistently as a interior decorative element in Young's designs. Such ornamental detail was especially concentrated in the most public areas of the building such as lobbies, vestibules and corridors. Ornamental cast iron interior elements were used in friezes, columns and column capitals, door and window mouldings and stairs. Cast iron was used because it was believed to have improved fireproof characteristics. This material could also imitate intricate decorative motifs found in masonry architecture and could be done with considerable savings in both time and money. This quality most certainly would have appealed to the pragmatism of Ammi Young.

Decorative cast iron was becoming an increasingly popular material used in exterior applications for building facades, especially for warehouses. The idea was that this would improve the fireproof qualities of a building. In large cities such as New York, Boston, Philadelphia and Baltimore, cast iron facades were a very popular architectural trend. This was something which Young must have been very much aware. The appropriateness of ornamental cast iron for traditional facade elements was a design issue that Young must also have been grappling with. Indeed, Congress had charged the Office of Construction to erect fireproof buildings,[23] and keeping costs down was an ever present concern. Cast iron elements such as columns, and cornices could be made more quickly and more cheaply that identical elements in stone. However, because of its qualities of permanence and firmness, stone such as granite and marble was traditionally viewed as the correct building material for Washington's public architecture.[24]

Young did experiment with the use of decorative cast iron architectural elements in the exterior of public buildings. At the south wing of the Treasury Building in Washington. cast iron ornament was specified and used at the ceiling of the South Portico.[25] In the

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[23] Report of the Committee on Public Buildings, 24th Congress, 1st Session, Rep. No. 247, 1836

[24] Report of the Committee on Public Buildings, 23rd Congress, 2nd Session, Rep. No. 90, February 5, 1835, written by William Elliot

[25] Cast iron was not originally intended to be used at the South Portico ceiling, but the original design that specified granite was changed by Secretary Salmon Chase as a cost cutting measure. In the Report of Operations at Treasury Extension for the Month of April 1860, written May 1, 1860, described the crew of five machinists fitting iron to the ceiling of the South Portico and the Report of Operations at Treasury Extension for the Month of May 1860, written June 1, 1860, described fitting iron "ornament" to the South Portico. These reports can be found at the National Archives, Record Group 1, Box 1434,

design of a post office design in Rutland, Maine (1856), decorative cast iron was used for transoms and cast iron imitations of carved stonework. In the Post Office for Philadelphia (1860), cast iron ornamentation was specified for the exterior frieze and belt courses. Later, when Isaiah Rogers, Young's successor to the position of Supervising Architect used cast iron for the antifixae on the roof at the Treasury Building in Washington, he was severely criticized by Alfred Mullett, the architect that succeeded Rogers and completed the construction of the north wing of the Treasury.[26]

Bowman became particularly involved with the integration of iron as a structural element in government buildings. As early as 1853, Bowman was analyzing the construction of the Assay Building in New York for the Treasury Department.[27] This was one of earliest American buildings that incorporated iron into its structure. James Bogardus and Hamilton Hoppin, pioneers of iron buildings were also involved in this project and they were asked to provide estimates for their iron work. Bowman was sent to examine the site for the iron building so it is not unreasonable to assume that Bogardus and Bowman exchanged views on the feasibility of iron construction.

Bowman and Young worked in conjunction on the design and construction of the Assay Building in New York. The building was designed to process the gold coming in great quantities from California. Wrought iron beams used to support the floors and roof of the building represented a considerable savings in construction costs. Bowman and Young continued to explore the possibilities of iron in federal building construction.

Between 1856 to 1860, federal building construction slowed down. Due to an economic downturn in 1858 as well as political troubles facing the nation as it approached the Civil War, the extension of the Treasury Building became the main project of the Office of Construction. The skills that Bowman and Young had developed in the years of the government's building boom were focused on the construction of the Treasury Building's Extension. No new projects were authorized for the Office of Construction after 1858; only those buildings for which money was already appropriated were constructed. Work on the Treasury Building continued and the South Wing was completed in time for Secretary of the Treasury, Salmon P Chase to move into his new office in 1861.

Young's Dismissal from the Department of Construction

Young's role in the construction of the Treasury appeared to have diminished in the years of 1858-61, due in part to an economic downturn and increasing political conflicts. His

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as well as at the Office of the Curator at the Treasury.

[26] Report of the Secretary of the Treasury on the State of Finances for the Year 1867 (Washington, DC: Government Printing Office, 1868) p 169..

[27] Carl Condit, American Building Art: The Nineteenth Century, (New York: Oxford University Press, 1960) p.

reputation and authority appeared to have suffered as well. [28] Outside criticism of Office of Construction's handling of the south wing was an issue: in a yearly report prepared by Young in 1860, he described several mistakes made in the south wing construction. He specifically mentioned that he was not responsible for any of these decisions.[29] They included the improper laying of paving in the halls and passages of south wing with North River flagging stone. The muddy color of the stone did little to reflect poorly lit hallways and some of the stone was cracking. The second item was the decision to use painted enamel slate fireplace mantels instead of marble. The third decision involved the material and workmanship of the south wing roof. Slate was chosen as the material, however it leaked extensively and had to be replaced at a considerable expense.

In 1860, Alexander Hamilton Bowman left as Engineer- in- Charge and was replaced by S.M. Clark. Clark seems to have taken a leading role in the Office of Construction and apparently gained the confidence of Salmon Chase, the Secretary of the Treasury.[30]

Starting in 1858, Congress became concerned with the federal building program costs, especially those costs associated with the South Wing of the Treasury Extension. Ammi Young became singularly implicated in a Select Committee review of the 37th Congress in 1862. This review cited Young for paying close to five times as much for Treasury column capitals than the Committee deemed necessary. The Committee accused Young of negligence and favoritism saying, "We can conceive of no excuse for the supervising architect for such neglect of obvious duty to his employer- the government - in accepting a bid which was not in actual fact the lowest... The architect should have published a schedule to prevent such favoritism."[31] Other items associated with the construction of the Treasury Extension for which Young was implicated were problems with the heating system and failure of the slate roof.[32] The entire roof had to be removed and redone at a great expense.

The Committee was influential in Young's removal as Supervising Architect in 1862.

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[28] Klock, pp.6-7.

[29] Treasury Extension - Yearly Report, sept 30, 1860 by Ammi B.Young, Acting Super Treasury Extension

[30] Letter to Honorable Sheldon Foote from Ammi B. Young, October 23, 1860, vol 4, entry 6, RG 121, National Archives.

[31] Thirty Seventh Congress, Second Session, House Report no. 137.

[32] The decision about the using slate was not entirely made by Young. In fact, correspondence from this time showed that Bowman along with a designer on the Treasury staff named French were responsible for making the decision abut using slate for the roof.

Young did have some supporters such as Congressman E.P. Walton from Vermont[33], who wrote to Secretary Chase in June, 1862 that he knew of "no man who more thoroughly minds his own business, or is more sensitive when he supposes anybody is interfering or marring his own... should not the virtue outweigh the fault?"[34] Apparently, this letter did not convince Secretary Chase, who in a succinct letter written July 24, 1862, wrote that the duties of the Supervising Architect were dissolved and Young's "services therefore are no longer required."[35] Stubbornly, Young wrote back the same day that he was also the Assistant Superintendent of the Treasury Extension and he would "continue to discharge its duties until otherwise directed."[36] Four days later, on July 28, 1862, Chase wrote back that the Assistant Superintendent position was also dissolved.[37]

Alexander Bowman was spared the treatment inflicted on Young. Due to ill health, Bowman took an extended leave of absence from his position at the Treasury Department and did not return. Secretary Guthrie's successor, Howell Cobb, granted Bowman his leave and thanked him for his "long and unremitting attention to the numerous harassing details of your position, and of your faithful and arduous discharge of the various complicated duties you have been called upon to perform."[38] Bowman returned to the military and served from March 1, 1861 until his death. During this time, he was promoted to the rank of lieutenant colonel and served on a commission that selected sites for naval operations on rivers in the western states. Bowman died in Wilkes Barre, Pennsylvania. on November 14, 1865.

Nine years later, on March 13, 1874, Ammi Young died at his home at 407 Fifteenth Street in Washington, DC, at age 75. From that address, he certainly viewed the completion of the Treasury Building. The obituary in the Washington Evening Star said that " he was one of the most faithful and upright of public officers and his administration of public affairs was marked by his ability and the strictest integrity."[39]

Joseph Goldsborough Bruff

Isaiah Rogers

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[33] Who Was Who in America, Historical Volume 1607-1896 (Chicago: Marquis Co., 1963) p. 560.

[34] Letter from E P Walton to Salmon P. Chase, June 28, 1862.

[35] Letter to Ammi B. Young, Esq. From S.P. Chase, July 24, 1862

[36] Letter to S.P. Chase from Ammi B Young, July 24, 1862

[37] Letter to Ammi B. Young, Esq. From S.P. Chase, July 28, 1862

[38] Letter to Alexander H. Bowman from Howell Cobb, 13 April 1860

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Isaiah Rogers was born on August 17, 1800 in Marshfield, Massachusetts, a sixth generation descendant of John Rogers, who settled there in 1647.[40] His mother was Hannah (nee Ford), and his father Isaac[41] was a local shipbuilder. It was in this environment that his son, Isaiah became interested in building and construction. No records of Isaiah receiving any formal education exist, however, at age 16, he went off to Boston, much to the dismay of his family,[42] to apprentice with Jesse Shaw, a housewright. He worked with Shaw until age 21 when he moved to Mobile, Alabama where he continued to practice carpentry. In 1822, while in Mobile, Rogers entered an architectural design competition for a theatre proposed for the city. He won the competition and his designs were carried out in 1824. Winning the competition brought him some measure of prominence and Rogers decided to return to Boston where he found employment with the noted architect, Solomon Willard, a practitioner of the Greek Revival style.[43] He stayed with Willard's firm for four years and in 1826, Rogers opened up his own practice in Boston.

Like other notable Boston architects of the time, Isaiah Rogers was not formally trained as an architect, however he was considered to be the most talented of the group of prominent architects who practiced there including Solomon Willard and Alexander Parris.[44] His most notable building was the Tremont Hotel (1829) in Boston. The hotel, designed in the Greek Revival style, was considered the first of its type in America to be an example of modern planning.[45] Designed to accommodate large groups of people in richly detailed public spaces including a furnace heated dining room, the hotel featured both single rooms and suites organized along central corridors. The hotel also included water closets with running water in its basement, a first for hotel design in America and perhaps the world. The incorporation of mechanical equipment became an important element of modern architectural design.[46]

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[40] Denys P. Myers, " Isaiah Rogers in Cincinnati," Bulletin of the Historical and Philosophical Society of Ohio, Volume 9, Number 2, April 1951, p.121

[41] Who Was Who In America, p.

[42] Talbot Hamlin, Greek Revival Architecture in America (New York: Dover Publications, 1944), p111.

[43] Some of Willard's more notable works were the Bunker Hill Monument (1825-42) in Boston and the Boston Branch of the Bank of the United States (1824).

[44] Hamlin, p.111

[45] Hamlin, p. 112

[46] This hotel was considered so influential at the time that a book entitled A Description of the Tremont House, with Architectural Illustrations was published in 1830. Fortunately this book preserved the plans, details and elevations of the Hotel after it was torn down in

The success of this work led to other commissions in the Boston area including the Suffolk Bank (1834) and the Boston Merchants Exchange (1842), as well as commissions in New York City. Roger's first major commission in New York came from John Jacob Astor who was interested in building a hotel. The Astor House (1832-36) carried forward the same principles Rogers established at Tremont House but to an even larger scale. During this project, Rogers established an office in New York and went on to spend fifteen years in the city. One of the more monumental structures Rogers designed was for the Third Merchants Exchange from 1836 to 1842. Carried out in the granite in the Greek Revival style, it incorporated an Ionic colonnade on the exterior and an 80 foot domed space on the interior.

After completing the Astor House, Rogers reputation for the premier designer of hotels in America enabled him to get many more commissions for hotels throughout the south and the west. Some of the hotels that Rogers designed between 1840 and 1865 included the Charleston Hotel in South Carolina, the St. Charles Hotel in New Orleans, the Burnet House in Cincinnati (1850), the Galt House in Louisville Kentucky, and the Maxwell House in Nashville (1860).

When he was commissioned to design the Burnet House in Cincinnati, Rogers decided to open his architectural office in this rapidly expanding Midwest city. A great deal of building was occurring there. Rogers had shown he was adept and working with traditional granite construction in monumental buildings, but as with other leading architects of the time, he also adopted the modern technologies of the time including the incorporation of cast and wrought iron for structural purposes. The Burnet Hotel included the use of cast iron structural columns decorated with the Doric order. Rogers also invented a truss used for am iron bridge that connected different sections of the building.

Rogers' years in Cincinnati were prosperous ones and with his son, Solomon Willard Rogers, Isaiah managed his firm there. He worked on a number of prominent monumental public buildings there including the Hamilton County Court House started in 1851 and finished in 1855. Rogers was also responsible for supervising the completion of the Ohio State Capitol Building in Columbus, Ohio between 1858 and 1860. In 1857, Rogers hired Alfred B. Mullett[47] to work in his office. After two short years in his office, Rogers elevated Mullett to a partner in his firm but left the firm in 1861.

It was this extensive and distinguished body of work that brought Isaiah Rogers to the attention of Salmon Chase, Secretary of the Treasury. On June 14, 1862, a letter from Isaiah Rogers to the Secretary Chase stated the he was taken by surprise at Chase's

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the 20th century.

[47] Alfred Mullet became the Supervising Architect of the Treasury in 1865 following Isaiah Rogers' tenure as the Supervising Architect from 1862 to 1865. Mullett was responsible for completing the final section of the Treasury Extension, the north wing from 1867 to 1869 while at the Treasury.

inquiry of June 10 as to whether he would accept the Office of Supervising Architect in the Treasury Department. [48] Rogers went on to explain that he did" not clearly understand the duties, but presume they are to plan, arrange plans and superintend such buildings as may be required by the Government to be erected."

DESIGN OF THE TREASURY EXTENSION

Mills Design

The Treasury Building was built over a thirty three year period between 1836 to 1869. Over this period of time, there were three major phases of construction. The initial portion of the building was designed and constructed by Robert Mills between 1836 and 1842. Though his earliest designs showed an E-shaped building with the principal facade to the east fronting Fifteenth Street, Mills was responsible for completing a T shaped building. The Mills portion of the Treasury measured 347 feet along the east front with a centrally located wing extending 110 feet westward towards the White House. The dominant external feature of the Mills wing was the continuous classical Greek inspired Ionic colonnade facing 15th Street. The interior was characterized by central corridors flanked by a series of offices whose configuration was determined by the repetitive use of the structural bay.[49]

The plan of the Treasury Building published in 1841 by Robert Mills generally outlined his intentions for the south and north wings as well. The north and south wings were symmetrically placed about the center of the east wing . They were identical rectangles in plan, each of the same dimension in depth of the east and center wings. The east portion of the north and south wings did not continue the colonnade that Mills established on the east wing. Instead, the east portion of the north and south wing extended beyond the face of the east wing and reached the plane of the colonnade. These wings enclosed the colonnade.

Mills planned the north and south wings with hexastyle[50] porticos, reached by several steps, centrally placed at the north and south fronts of the wings. Hexastyle porticos, reached by steps, were also placed at the west ends of the each of the wings, identical in design to the portico located at the end of the center wing. These porticos had greater dimensions in depth than those on the north and south face of the proposed wing extensions. The three west porticos were connected by terraces which enclosed two courts between the north, central and south wing extensions. The courtyards were square in plan, and each contained a circular shaped garden area which possibly contained fountains

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[48] Letter from Isaiah Rogers to Salmon P. Chase, dated June 14, 1862

[49] William H. Pierson, Jr., American Buildings and Their Architects-Volume 1, The Colonial and NeoClassical Styles, (New York: Oxford University Press, 1970), pp. 407.

[50] Hexastyle is defined as having a row of six columns across a facade or portico.

in the center.

A perspective sketch (not necessarily drawn by Mills but which attributed him as the architect) of the Treasury Building viewed from the southeast offered more information about Mills' intentions for the design of the south wing. The cornice and parapet line established at the east wing continued through to the east and south facades of the south wing while the rhythm of the Ionic colonnade was maintained on the south wing through the use of engaged pilasters. The design of the South facade was dominated by the pedimented portico reached by a monumental set of steps. The pediment of the portico extended above the cornice and parapet wall and the pediment appeared to extend the full depth of the south wing. Six bays flanked either side of the hexastyle portico of the south wing's southern facade. The east facade of the south wing was five bays in width and the center bay at the ground story contained an entrance reached by a set of steps.

The treatment of the South Portico seen in the perspective sketch differed from that which was shown in plan. The sketch showed this portico having a greater depth, consisting of two rows of columns, not the single row shown in the in 1841 plan. This was confirmed by a c. 1850 plan developed by Mills, sent to Secretary of the Treasury, Thomas Corwin . This E shaped plan indicated that the pedimented south and north porticos were supported by two rows of columns. Both rows of the north portico were six columns wide, however at the South Portico, the inner row contained four columns.

Mills' 1853 plan was not as skillfully arranged as his earlier 1841 plan. Two features of this plan were unusual. First, the symmetrical arrangement of architectural elements about a central axis, a strong tenet of classical Greek architecture, and one traditionally adhered to by architects adapting the Greek Revival Style for America's public architecture, was discarded. Secondly, the entry sequence at the north and south porticos did not follow the same rules that Mills applied at the east entry. The grand sense of ceremonial entry connoted by Mills' use of a grand stairway and portico did not follow through to the interior of the building at the south or north wing. Where one would have expected a more generously sized lobby, the space instead was too narrowly proportioned in relation to the exterior stair and portico.

In the letter accompanying this plan, Mills reported to Corwin that the South Wing was intended to meet the functional needs of the Treasury Department.[51] He proposed this plan in order to provide the projected number of offices thought necessary for the growing Treasury Department. He stated that the declinations of the land to the south made it possible to include an additional story of rooms and the heights of the rooms in the basement and first story so that both floors could adequately be designed as offices. Mills estimated that the south wing would provide up to 50 more offices for the Treasury and he projected that the cost of the south wing would be $265,000. He provided greater number of offices by extending the east wing to the north. This was done, according to

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[51] RG 121, entry 26, Box 1422, Report on the extension of the treasury Building by Robert Mills to Secretary Corwin

Mills, in an effort to maintain the Pennsylvania Avenue vista from the Capitol to the White House.

Though there were significant planning and construction modifications incorporated in the South and West Wings, it was Mills' E shaped plan, that determined the essential form of the Treasury Building and influenced the future design and building of the south, west and north wings. The core of these planning and construction modifications began to be determined as early as 1838.

Criticism of Mills and the Thomas U. Walter Design

Starting in 1838, a great deal of criticism was aimed at Mills by the Congress. Particularly strident criticism came from Levi Lincoln, a Congressman from Massachusetts who served as Chairman for the House Committee on Public Buildings and Grounds. Once he received the support of President Van Buren, Lincoln employed architect, Thomas U. Walter, to study and present a report on the Treasury Building. This report, submitted on January 29, 1838 outlined four objections that Walter found with Mills design of the Treasury. They included the unsuitableness of the site; the weakness of the structure; a lack of adaptability for which it was designed, and its architectural appearance.[52]

Several of the items that Walter criticized were addressed in the construction of the south and west wings. Walter criticized the construction techniques used by Mills which he claimed resulted in a weakness of structure. He claimed that the two foot three inch thick outside walls were too thin and weak to balance the forces exerted by the vaulted building. The pilasters or antae, he suggested, should have been constructed in courses to correspond with the courses of ashlar, so that a stronger structural bond would have been formed. Instead, the pilasters were composed of large stones set on ends of each other. Walter stated that this arrangement would not resist the lateral pressure. He claimed that Mills' structural vault design exerted a horizontal thrust that must be countered by the wall itself. He stated that if a greater number of columns had been introduced with a horizontal architrave placed upon them, iron could have been introduced to counteract the lateral pressure of the arches.

In terms of planning, Walter criticized the suitability of rooms in the basement to be used as offices because they would be too dark and damp. He also noted that the fourth floor windows were too small and the fact that they were behind the colonnade further impeded ample light from entering into these rooms. Walter also stated that given the length of the corridors, their dimension was too narrow at nine and a half feet, and that fifteen feet would be a more appropriate dimension. He stated that the corridor lighting would be inadequate. Walter criticized the dimensions of the rooms as being too small and suggested that 20'x24' would be better than the 15' x 20'-6" dimension. Walter also

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[52] Report on the New Treasury Buildings and Patent Office At Washington : Made at the Request of the Committee of the House of Representatives on Public Buildings and Grounds, by Thomas U Walter, January 29, 1838 (Philadelphia: L.R. Bailey, 1838)

mentioned the inadequacy of the sandstone as a durable building material and recommended that all future government buildings be constructed of marble or granite.[53]

Mills was given the chance to respond to Walter's criticisms and did so in a letter in which he made a strong case refuting the claim that the structure was too weak.[54] Still, the criticism had its effect as Mills was relieved of his position in 1851.

Apparently, Walter's criticisms of Mills' work, as well as his renown as an architect in his own right paid off, for in 1855, he produced two drawings for the extension of the Treasury Building. The one drawing that remains today consisted of the entrance floor plan of the north, south and west wings as they connected to Mills existing T shaped plan of the east and center wings. The drawing contained elevations of the north, east and west wings and illustrated the formal basis for the subsequent planning and design of these wings as carried out Ammi Young, Isaiah Rogers and Alfred Mullett.

In Walter's design, the south and north wings were mirror images of each other in plan and elevation with the exception of the grand exterior stair at the south wing which contained twice as many steps. In Walter's drawing, only the north elevation was drawn and it can be assumed that it was intended to be identical to the south elevation. The dominant feature of these wings was the centrally placed pedimented portico, however instead of the hexastyle portico that Mills intended to place at each wing, Walter's plan specified a grander octostyle portico consisting of Ionic columns.[55] The middle two columns reinforced the sense of center axis and extended four deep to form an outdoor vestibule or lobby. On the north wing, it appeared that Walter considered placing an interior lobby, but the exterior walls were erased and replaced with two rows of columns. The wings extended eight bays to the east and west of the central portico, making it longer than Mills' 1853 design. The eighth bay was shorter than the others and accommodated the pedimented porticos consisting of a pair of Ionic columns in antis placed at the ends east and west ends of the north and south wings.

Walter's west elevation facing the White House was more fully developed with an octostyle pedimented portico placed in front of a colonnade. The colonnade consisted of three pairs of Ionic columns in antis placed symmetrically about the center axis. Set back from the projected colonnade, the wing extended nine bays to the north and south and was contained by the projecting pedimented porticos in antis placed at the west ends of

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[53] Letter written by Robert Mills to the Committee on Public Buildings, February 21, 1838

[54] Ibid.

[55] Hexastyle and octostyle are terms used to describe the arrangement of columns on the exterior of classically styled buildings. They refer to the number of columns at the front of a facade. Hexastyle means that there are six columns and octostyle means that there are eight columns as is the case at the west portico of the Treasury Extension.

the north and south wings.

It is possible to infer that Walter intended the west entrance to be the primary, more public entrance. The fact that it faced the White House also might have increased the importance of this facade in a hierarchical sense. In elevation, it has a greater level of complexity, incorporating a layering of architectural forms and elements as exhibited in many palaces of the Italian Renaissance. The fact that Walter included a spacious interior lobby at the west wing entrance also supports the idea that this was intended to be the primary entry. Though he does create a very strong entry sequence at the north and south wings, and his architectural treatment at the exterior of these wings is powerful, the fact that he did not include a interior lobby as part of the entry sequence into these wings implies that they were not intended to be the primary entrances. There is a spacious outdoor vestibule at each of these wings, however from there, the entry sequence leads into the central corridor, a circulation space, not a gathering place.[56]

Walter's facades emphasized symmetry about the central axes and created a monumental sense of entrance. Walter's handling of the facades certainly differed from Mills, as was his intention, but the facades certainly were complementary to Mills elevation along 15th Street. One of the many ongoing criticisms of Mills' facade was that it did not emphasize a sense of symmetry strongly enough. There was much debate in the late 1860's and early 1870's about the possibility of placing a pediment in the center of the colonnade along Fifteenth St.[57] Walter did nothing so drastic, but his use of pedimented porticos at either end of Mills wing did help to strengthen the sense the symmetry of Mills' east wing.

In Walter's design for the north and south wings, the relationship of the plan and elevation was masterfully handled. The symmetric design of the facade belied the arrangement of spaces within these wings. In fact, the arrangement of rooms about the center axis in the south wing was not symmetrical. There were several reasons for this . First, Walter envisioned using a different structural system than the one used by Mills. Walter enlarged the structural grid yet was able to reduce the mass of the load bearing wall by introducing wrought and cast iron structural members. This method of construction had been tested and was more easily achieved by 1855. This meant that typical room sizes and corridors had a greater depth. The depth of the north, south and west wings were more that 20% greater than Mills' east wing. In this way, Walter was able to respond to his criticism of inadequately sized offices and dark corridors of the Mills' wing. The corridors in Walter's plan, although wider than those in the east wing, were not as wide as the fifteen feet he had recommended as appropriate in 1838. A second reason for the asymmetry in plan in

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[56] It is interest to note that Alfred Mullett, architect of the north wing, chose not to follow Walter's entry sequence into his design of the north wing. Instead, Mullett embellished this procession by designing a grand interior lobby. The entry sequence culminated at the Cash Room, a space which he intended to be the grandest public room built in the United States at that time.

[57] See Mullett's report to the Secretary

the north and south wings was that in order to connect to the east wing, Walter extended the east wing corridor into the south and north wings. However, because of the differing structural grid, the intersection of the east and south wing corridors was closer to the central axis of the south wing than the intersection of the west and south wing corridors. As a result of this, the spaces in the eastern part of the north and south wings were extended to enclose the east wing colonnade, and were greater in length when compared to those spaces at the opposite side of the wings.

In is not clear why Thomas Walter was not chosen to oversee the construction of the Extension since he developed the building's basic concept. As "Architect of Public Buildings," he was seen as the successor to Robert Mills and was assigned to enlarge many of the buildings that Mills had superintended. It is possible that the fact that he was in charge of another major project for the design and construction of the Capitol Extension and Dome, to place him in charge of the Treasury Extension project might have overextended his ability to adequately oversee both projects.

More likely, the choice of who would be chosen to oversee the Treasury construction was political in nature. Secretary of the Treasury, James Guthrie had forged a close working relationship with Captain Alexander Hamilton Bowman and Guthrie had a very high regard for Bowman's engineering and managerial abilities.[58] This factor might have been instrumental in the decision of placing Bowman and Ammi Young in charge of the design and construction of the Treasury Extension.

Working Drawings of Ammi Young and Bowman

Thomas U . Walter prepared only two sheets outlining the conceptual design of the Treasury Extension. The design of the Treasury Extension changed significantly from the Mills design, but these two sheets did not contain enough information by which to build such a complex structure. Although the Office of Design and Construction had produced formal drawings for many structures including post offices and custom houses in the early and mid 1850's, it is unusual that no formal set of plans were prepared for the Treasury Extension. Instead there were a series of working drawings that were produced by the Office of Construction. It was apparent that there was pressure to prepare these working drawings quickly. Bowman made a reference to this in the 1855 report in which he stated that work had to be pushed back from March, when Congress appropriated the funds for the Treasury Extension, to July 1855, because of the preparations of the plans and details.[59]

These working drawings produced by Ammi Young and his staff developed the ideas that Walter's original two drawings outlined. The drawings reflected the stages by which the

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[58] Annual Report of the Secretary of the Treasury, Vol. 10, 1852-53, p.19.

[59] Report of the Secretary of the Treasury on the State of Finances for the Year 1855 (Washington, DC: Government Printing Office, 1856) p.232.

building was actually constructed. The earliest drawings focused on the construction of the south and west wings, not the north wing. There were some early elevation drawings of the south wing which included the east and west facing portico elevations at the ends of the wings, but in general, the drawings provided the information necessary for the construction of the particular part of the building that they were working on at the time. For example, instead of a complete section drawing of all the floors that shows wall construction in the south wing, there were sections and elevations for many of the individual floors.

These drawings and details provided the general framework by which the building was constructed. However, the design of the building noted in the working drawings and the way it was actually built, sometimes differed. For example, several drawings described the granite coursing on the exterior wall of the basement and first floor of the south wing. The sizes of coursing shown in the drawing of the elevation differed from the way it was actually constructed. Perhaps such changes were due to monetary constraints, perhaps the drawings did not reflect the most efficient construction techniques, it is difficult to say. In any case it is reasonable to conclude that the there must have been a certain degree of designing and working out of details, that occurred in the field as the project progressed.

Design of the Site

In the original 1791 L'Enfant plan for Washington, Pierre L'Enfant set aside about 82 acres containing land designated as the area reserved for the development of the President's House. In 1796, President Washington directed that two executive office buildings, the Treasury and the War Office, were to be located to the east and west of the White House. These buildings, designed by George Hadfield were constructed between 1798 and 1800 and were occupied by the year 1800. The two and a half story brick buildings, derived from Anglo-Georgian prototypes of the eighteenth century, were designed to compliment the President's House.[60] However, these buildings were destroyed in 1814 by fire intentionally set by the British during the War of 1812. James Hoban, architect of the President's House, rebuilt these two buildings and added an additional two structures for the State Department and the Navy Department. In 1833, the Treasury Building, which occupied the southeast quadrant of the four executive office buildings, was destroyed by an arsonist. When Mills constructed the east and center wings of the Treasury Building from 1836 to 1842, the east wing connected to the old State Department Building. The State Department Building remained intact until 1866 when it was torn down so that the north wing of the Treasury Building could be constructed.

The grounds to the east of the President's House would later be occupied by the Treasury Extension. Prior to the construction of the south, west and north wings of the Treasury, these grounds were used for gardens for the President's House and also contained a masonry vault for the Treasury. This vault, designed in 1805 by architect, Benjamin Henry

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[60] Pamela Scott and Antoinette J. Lee, Buildings of the District of Columbia, (New York: Oxford University Press, 1994), p. 151.

Latrobe, built to be fireproof, was one of the first examples of fireproof construction in the United States. It connected to the first Treasury Building designed by George Hadfield[61] and was located on the space now occupied by the central portico of the west wing of the Treasury.

In 1807, President Jefferson along with architect, Benjamin Latrobe began to develop plans for the area surrounding the President's House. The main approach to the President's House was from Pennsylvania Avenue through a triple arch to the southeast. This led to a meandering drive leading to the east wing of the house bordered to the north by a garden and to the south by woods. Though the full extent of these plans did not come into fruition, certain elements did take shape. These included the southeastern entrance gate to the White House Grounds and the winding path. Also, the patch of land marked "garden" on the 1807 plan was thought to be maintained by Jefferson as a garden of mixed vegetables, herbs and annuals. For the next 50 years, the land east of the White House, on the site presently occupied by the west wing of the Treasury Building, continued to be used in this manner. President Jackson further developed the site around the present Treasury Building by building a new stable in 1833 based on working drawings of William P. Elliot.[62] Jackson was also responsible for introducing running water into the White House. The source of the water came from a spring at Franklin Square (presently at 14th and K Sts.) which was transported underground via 14th St through pipes made out of hollowed out tree trunks. The pipes led to a reservoir located between the Treasury Building and the State Department. The resevoir was five to six feet deep, probably circular in shape and covered with a tin roof.[63]

As discussed above, Robert Mills' E-shaped design of the Treasury was chosen in 1833 by President Jackson. The full extent of those plans were never constructed and in 1842, the east and center wings were completed and occupied. It is not clear what the nature of the landscaping was to be to the south and west of the building; early lithographs focus on the

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[61] According to William Seale, in The President's House: A History (Washington, D.C.: The White House Historical Association, 1986), in 1814, when the Treasury Building was burned, this fireproof vault survived the fire somewhat damaged but still intact. During President John Quincy Adams' term (1825 - 1829), this structure was used as a tool shed. In 1835, President Andrew Jackson converted this structure into an orangery. During the administration of Franklin Pierce, in 1853, the former Treasury vault was converted into a greenhouse and remained so until it was torn down to make room for the Treasury Extension in 1859.

[62] According to William H. Pierson, Jr. in Volume 1 of American Buildings and Their Architects, Eliot designed the free standing Greek Doric portico for the Patent Office Building. The Patent Office Building was designed by Robert Mills in 18.

[63] William Seale, The White House, The History of an American Idea (Washington DC: The AIA Press, 1992), p.88-89.

design of the building as opposed to the grounds.[64] However by 1857, a lithograph was produced that indicated some intentions for landscaping about the completed Treasury Building site. This treatment around the Treasury Building was probably not carried out in this manner, especially since the south and north wings of the Mills design were never constructed.

On March 27, 1851, Congress authorized President Millard Fillmore to hire Andrew Jackson Downing, a renowned horticulturalist to landscape the area between the Capitol and the President's House. Downing's plan for the Public Grounds of Washington, D.C. was the first plan for a large scale public park in the United States[65] and incorporated many of his innovative mid nineteenth century theories regarding English naturalistic or curvilinear styles into grand public parks for American cities.[66] Downing's concept consisted of six parts including The President's Park or Parade.[67] Downing planned to have a grand entrance at the end of Pennsylvania Ave. to serve as a symbolic entrance from the city to the new Presidential Park. He proposed to place a marble triumphal arch at this point with three semicircular gates that led to three carriage roads. Two of these roads were intended to lead to the Presidential Parade, a large circular piece of ground surrounded by a circular carriage drive 40 feet wide. The third road was intended to lead to the President's grounds. In these plans, the E-shaped footprint of the Treasury Building reflected Robert Mills' original design for the building. Directly in front of the south wing of the Treasury was a semi-circular court containing the classically inspired archway envisioned by Downing. This represented Downing's solution to the difficult design problem that faced subsequent architects at this site: the resolution of the Pennsylvania Avenue axis at the south front of the Treasury Building.[68]

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[64] A Congressional Record dated May 26, 1841, transcribed correspondence between Robert Mills and M. St. Clair Clarke, President of the Board of Commissions. Clarke asked Mills if any part of the President's Grounds would be enclosed for the Treasury, and if so, how it be separated. Mills responded that he wrote a letter to the President dated May 12, 1840 stated that his construction site had to encroach on these grounds. He included a diagram plan and stated that "the disposition of this space was to be in harmony with the President's house, when completed.

[65] Report prepared for the National Park Service by EDAW, Inc. entitled "President's Park Cultural Landscape Report: Site History, Existing Conditions, Analysis and Evaluation, May 1995, p. 3-5.

[66] John W. Reps, Washington on View, The Nation's Capital Since 1790, (Chapel Hill: The University of North Carolina Press, 1991), pp 113-114.

[67] Letter from A.J. Downing to President Millard Fillmore dated March 3, 1851.

[68] For a discussion focusing on the historical context of the siting of the Treasury Building in a manner that partially obscures the visual connection between the White House and the Capitol, see the Treasury Building Historic Structures Report for the East Wing. See also

Only a portion of Downing's plan for the Presidential Park was actually carried out, however, it was important in that it provided a concept that was developed and refined by those who followed in the years after his untimely death in 1852. A map of Washington published in 1851 by James Keily included Downing's idea of a Parade[69] directly south of the White House. There were no roads that connected Pennsylvania Avenue to the Parade, only a wide road south of the executive buildings that connected Pennsylvania Avenue to New York Avenue. This arrangement was largely reflected in Thomas U. Walter's 1852 drawing showing his proposed plans for the Treasury Extension to the east of the White House and his design for the new State, War and Navy Departments to the west of the President's House. Walter's plan omitted the idea of the Parade perhaps because it did not exist at that point.

During the administration of Franklin Pierce, in 1853, the orangery[70] built by Andrew Jackson, located on what would become the site of the west wing of the Treasury, was torn down to its brick walls and expanded into a greenhouse. This structure was so well liked by President Pierce that it was used as his private solarium.[71] In 1857, plans began for the construction of the Treasury Extension. A letter from the Secretary of the Interior was sent to the Chairman of the Committee on Public Buildings and Grounds proposing the removal and replacement of several building about the Presidential mansion[72]- these included the greenhouse and the stables built by President Jackson. Another brand new iron and glass greenhouse was constructed to the west of the White House in 1857.

Chapter III, Architectural Description, The Site, South Wing Grounds.

[69] The parade was intended to be a place for parades, military reviews, and public festivities. It was a large open space, circular, and had a mile long 40 foot wide road encircled it.

[70] An orangery or orangerie was a popular 18th and nineteenth century structure housing orange trees and other plants. These plants were grown in tubs during the winter, often in unheated, but sheltered conditions.

[71] According to Seale on p.15 of The White House, the area to the southeast of the White House, much of which would altered as the construction of the Treasury Extension took place, was a "sanctum of the presidents from Monroe to Buchanan." When these structures were torn down, President Buchanan made certain that the greenhouse and the stables were replaced.

[72] Letter dated February 17, 1857 from R. McClelland, Secretary of the Interior, to Hon. Edward Ball, Chairman of the Committee on Public Buildings and Grounds, House of Representatives, entitled "Removal of Buildings about the Presidential Mansion" taken from the 34th Congress, 3rd Session, Mis. Doc. No, 64. This letter makes no mention of the archway that existed (see Plate II - 24), however since this element was located on the Treasury construction site, it too must have been removed at this time.

In 1856, the site to the south and the west of the Treasury Building was prepared for the construction of the extension. Excavation was begun and paths for bringing materials to the site were made. The site around the Treasury Building during the construction was used to store materials.

CONSTRUCTION HISTORY

The Debate over Fireproof Construction and the Treasury Building

There were three major goals for the construction of the Treasury Building. They were to provide enough office space for the rapidly expanding Treasury Department, design a building to reflect a sense of grandeur and permanence for an growing American republic, and to make certain the building was fireproof.

By the early nineteenth century, the desire to develop fireproof construction techniques was a great concern to architects and engineers. This concern for "fireproof" construction increased due to terrific fires in New York City in 1835 and 1845 which destroyed large portions of the city's downtown district[73]. The Treasury Department also had a history with fires as there had been three significant fires associated with the Treasury Building prior to 1836.

President Andrew Jackson requested an investigation and report on the cause of the 1833 fire in the Treasury Building.[74] In a letter of April 12, 1833, Louis McLane, Secretary of the Treasury responded to President Jackson. He outlined Robert Mills' suggestion to erect a "fireproof building" of sufficient extent to accommodate all the Treasury offices under one roof. Jackson agreed with Mills' ideas but had to wait for the Congress to debate the issue. The discussion concerning the erection of a new Treasury Building occurred in Senate and the House of Representatives started in 1833 and continued through 1834. The necessity for a new fireproof Treasury Building gathered momentum. During this time, a debate arose which material was best to build new federal buildings. It was determined that the proper material for the federal government's fireproof buildings was granite because it combined beauty with durability"[75] and it was also less expensive than marble.

Prominent architect, William P. Elliot described the latest architectural trends in planning and technology with regard to the building of a new Treasury Building. Although Elliot's discussion of the planning of the building and the arrangement of rooms was not particularly innovative, he understood that it was the materials of construction that

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[73] Carl W. Condit, American Building Art - The Nineteenth Century, (New York: Oxford University Press, 1960), p.28.

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[75] Report on Public Buildings, Feb 5, 1835

improved the fireproof qualities of a building. Walls were to be constructed of brick and faced with granite.[76] Elliot went on to specify that floors would be made of masonry supported by cast iron joists. Windows, doors, and roofs would be of cast or wrought iron. Although Elliot's suggestion of cast iron for the joists might not have been sound (because of this material's tendency to crack in tension[77]), he was correct in suggesting that architectural elements traditionally carried out in wood needed to be replaced with members made of metal in order to increase the building's fireproof qualities.

Robert Mills, architect of the east wing of the Treasury, had confronted the problem of building a fireproof building for the Record Office in Charleston, South Carolina in 1822-1827. In order to make the building fireproof, the entire building was constructed of masonry. Windows and door frames were cast iron. The design and construction techniques utilized in Record Office were applied to a large extent at the east and center wings of the Treasury.[78]

Technological Context -The Use of Iron in Nineteenth Century Building Construction

When Robert Mills practiced architecture in the early to mid- nineteenth century, he was no doubt familiar with the structural capabilities of iron; he knew of the fire resistive qualities of this man made material. He also undoubtedly understood that iron gave buildings increased structural capabilities with much less mass as compared with masonry. As early as the mid to late eighteenth century, engineers in England and Scotland were developing cast iron structural forms such as columns and beams used in buildings.[79] However, when Mills built his portion of the Treasury, he did utilize iron for structural purposes. Instead, Mills incorporated iron into specific elements such as window frames

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[76] Donald Friedman, Historical Building Construction - Design Materials and Technology, (New York: W.W. Norton and Co., 1995), p.19 This was not a new concept, for by 1815, cities such as New York had building codes requiring the use of masonry for walls and slate for roofs

[77] Metals in America's Historic Buildings, Uses and Preservation Treatments. (Washington, DC: Preservation Press, 1980), p.42. Cast iron, formed by casting liquid metal into foundry molds, was the more suitable material for elements used in compression such as columns, while wrought iron, which by the 1850's was shaped or rolled by machines, had elasticity and tensile strength needed for bolts, beans and girders. Cast iron had a high carbon content (2.5-4 percent) which made it hard and brittle. By comparison wrought iron contained little carbon (not over .035 percent). Rolled wrought iron, used for structural purposes in the mid nineteenth Century was the precursor to structural steel.

[78] Pierson, pp. 386-394

[79] Carl Condit, American Building Art: The Nineteenth Century, (New York: Oxford University Press, 1960), pp. 25-26.

into the east and center wings of the Treasury Building. The method of construction he employed was still based on traditional masonry construction. Masonry construction had been around for centuries and its capabilities well understood. This was not the case for iron construction.

The period of time between the Mills design of the Treasury Building in the mid 1830's and the Walter design of the Treasury Building in the early 1850's marked a transition between traditional masonry construction and early iron construction in the United States. As such, there was a marked change between the older wings and the structure of the new wings of the Treasury Building which incorporated cast iron columns and wrought iron beams. There was a reduction building in mass - both exterior and interior walls became thinner. Iron allowed for larger volumes of space to be achieved for offices and corridors. And because the walls were less massive, greater amounts of light were able to be brought to these spaces through windows.

Walter's design took advantage of the growth of scientific experimentation in America during the 1830's and 1840's at the expense of traditional rules that Mills employed. The nineteenth century saw the creation of civil engineering as a discipline distinct from the architect. Early American engineers such as August Canfield who patented an iron bridge in 1833, Squire Whipple with his patented bowstring truss bridge of 1841 and Thomas Pratt of Boston and his patented Pratt truss bridge in 1842 developed scientific theories and formulas for structural iron. These developments where spurred on by the construction of transportation systems including canals and railroads throughout the United States.[80]

Structural engineering for bridges and railroad design flourished during this time. Refinements continued to be made through the 1840's and 1850's as the techniques for producing iron improved and the properties of iron became a subject for intensive study. However, structural engineering for buildings did not advance at the same pace. Prior to the 1840's there were only a few examples of structural iron being used in buildings. William Strickland and John Haviland did experiment with wrought and cast iron in some of their buildings in the 1820's and 1830's but these generally represented the exception. During this time, the British were leading the way where a growing number of mills and warehouses were built using interior load bearing cast iron columns. The British published important books and treatises on iron construction in the 1830's and 1840's. These books had a profound influence on several Americans including Daniel Badger, James Bogardus, Peter Cooper and Abraham Hewitt. These men established iron foundries in New York and New Jersey and began producing all types of structural and architectural forms in iron. The strength, lightness, ease of construction, economy, durability and the fireproof qualities of iron as well as its architectural beauty and its ability to span vast open areas convinced Badger and Bogardus to market the material for use in utilitarian structures such as stores and warehouses. Badger did not advocate its use for monumental buildings but did advertise his product line in a catalogue that exhibited many ornamental iron

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[80] Ibid.

forms. Many other fabricators of iron followed Badger's lead and also produced catalogues that advertised their line of ornamental and structural cast and wrought iron.

These forms were used by James Borgardus in what was generally regarded as the first all iron building: a factory in New York in 1849. Bogardus and his contemporaries went on to construct a distinctive cast iron architecture in New York and other cities through the 1860's. Bogardus patented all the structural elements of his factory building from the iron girders, cast iron columns, cast iron facade pieces, the floor girders cast in the form of shallow segmental arches with wrought iron tie rods, as well as the beams in the shape of an "I" that were to be framed into the girders. The I beam constructed first in cast iron, then wrought and finally steel became a fundamental building material in late nineteenth century and continued into twentieth century architecture.

In 1845, an iron manufactory was founded by Edward Cooper and Abram S. Hewitt in Trenton, New Jersey.[81] Initially, the company was kept busy by supplying iron for the railroads. They began to roll a 7" high rail for the Camden and Amboy Railroad in New Jersey. These particular beams were too rigid for the railroad but were suitable for buildings. Many builders and architects began to install these railroad beams into their new fireproof buildings.[82] In 1853, in New York, the Harper and Company Building employed a Cooper and Hewitt 7" bulb tees. The bulb tee got its name because of its shape.

Peter Cooper, a philanthropist and financial backer to the Trenton Iron Works, was in 1853, building the centerpiece of Cooper Institute in New York City. He diverted the beams from the Harper and Co. building to the Cooper Institute (1853-1859). The fireproof floors of this building were very similar to those found in the south and west wings of the Treasury Building, As described in the London periodical, The Builder, the floors of the Cooper Institute consisted of a series of long, narrow flat brick arches supported in turn by wrought iron beams. Instead of these beams being supported on masonry walls as they are at the Treasury, the ends of the beams in the New York building were supported by girders of wrought and cast iron. The girders were then supported by a range of cast iron columns. The brick arches averaged about 4 feet span, and 15' from girder to girder. The floor systems on the south and west wings of the Treasury Building perhaps were slightly more advanced, being designed a few years after the Cooper Institute Building. The brick arches of the Treasury Building ranged from 4'-6" to 5'-6" spans and the wrought iron beams spanned just over 20 feet.

In the 1850's , the decision made by the Treasury Department's Office of Construction to investigate the new technologies and incorporate the latest materials and methods into

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[81] It became the Trenton Iron Works in 1847.

[82] According to Charles Peterson in a paper called "Inventing the I Beam: Richard Turner, Cooper and Hewitt and Others", the U.S Mint Building in Philadelphia, and John Notman's Nassau Hall in Princeton, N.J. incorporated these railroad I beams into their structure.

their buildings was important. Ammi Young and especially Alexander Hamilton Bowman worked closely with Peter Cooper and the Trenton Iron Works. The buildings produced by the Treasury Department including the south and west and subsequently the north wings of the Treasury Building helped to contribute to the development of American building technology, a technology that paved the way for the next big step in American architecture, the steel frame skyscraper.

Prior to their work on the Treasury Building, Ammi Young and Captain Bowman familiarized themselves with iron building techniques in the US Assay Office (1853-54).Young designed the building and Bowman oversaw the use of iron in the construction of the building. In an October 7, 1853 letter to James Guthrie, the Secretary of the Treasury, he stated that the use of wrought iron beams were "abundantly strong for our purposes, for less than half the price of the proposed 'made beams.'" [83] Bowman stated that he had these beams tested so that a span of 15 feet could hold 9000 pounds suspended from the middle without deflection. He was also pleased that the beams could be fabricated and delivered quickly, "five or six days after they get the order."[84] The use of iron in this project satisfied the three major criteria which Bowman considered in order for the building to be successful: first it was more than structurally adequate; second, it was relatively inexpensive; and three, it was able to be constructed in an efficient and timely manner.

In 1854, the Trenton Iron Company made further advances in their technique for manufacturing wrought iron beams. This technical advance convinced Bowman to utilize this company's beams extensively for the Treasury's building program. Records for the Trenton Iron Company from 1854 stated that " the Treasury Department have decided, after full examination, to use them [the wrought iron beams] in all Government building, of which a large number are now in progress."[85] These advances also captured the attention of Captain Montgomery Meigs who was interested in utilizing the wrought iron in the construction of the US Capitol on Washington. Both Meigs and Treasury Secretary Guthrie had sent representatives to the Trenton Iron Works because a series of experiments that tested the strength of the wrought iron were being carried out. Guthrie later sent a letter to Congress explaining that he had requested an appropriation of $3500 to "test the strength of wrought iron beams and girders of all dimensions" to be carried out by the Trenton Iron Works, along with a Treasury representative, because of the "very large amount of rolled iron required in the construction of buildings now authorized by

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[83] According to Peterson, the 'made beams' were probably plate girders. Plate girders were constructed by bolting together a number of different metal forms and was the immediate precursor to the rolled I beam.

[84] Letter from Alexander Hamilton Bowman to Secretary Guthrie, October 7, 1853.

[85] "Documents Relating to the Trenton Iron Company (pamphlet), New York, November, 1854, p.12

Congress."[86]

The Trenton Iron Company continued to experiment with the size and shape of the beam. The bulb-T beam, the compound I beam and the single I beam with unequal flanges were the precursors to what finally emerged as the symmetrical I beam. This I beam produced by Cooper and Hewitt was the product used by Bowman. One of the first Treasury designed buildings that utilized the wrought iron beams was the Custom House in St. Louis. [87] In April 1855, plans were made to incorporate the Trenton iron work. By the summer of 1855, (as Young and Bowman had begun to produce working drawings for the Treasury Extension), Bowman reported on the success of the new wrought iron beams.[88] He stated that wrought iron was used for many building purposes including "beams, girders, window sash and shutters, sash cord, doors, etc... at a cost comparatively small over the cost of the same in wood and cast iron." He went on to identify that the rolled beams used in the buildings were seven and half inches in height and by early 1856, he intended to have a twelve inch beam.[89]

The buildings designed by Bowman and Young incorporated many of these experimental forms. For example, the Chicago Custom House of 1855 and Custom House for Wheeling, West Virginia used the bulb tee. Other buildings such as the Alexandria VA Custom House, the Georgetown Post Office and the US Treasury Extension used the symmetrical I beam, the precursor for the steel I beam used today. By December, 1856, the Secretary , having received the appropriation from Congress, dispatched Major Robert Anderson to Trenton, NJ. Anderson held the post of "Inspector of Iron" until November 15, 1859. His role was to run tests on structural iron and he kept a set of books on the iron beams that the Treasury had ordered from the Trenton Iron Works. Together Bowman and Young working with Cooper and Hewitt achieved a public private cooperation between industry and government that helped to advance the development of American iron construction.

Alfred Mullett described in an 1866 report to the Secretary the fire in the Custom House

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[86] Letter for Secretary of the Treasury, James Guthrie to Senator R.M.T. Hunter, Chairman of the Committee on Finances, dated February 1, 1855.

[87] The building was demolished in 1941 and no structural documentation was done prior to demolition.

[88] Report of the Secretary of the Treasury on the State of the Finances for the Year 1855, Washington, 1856, p.218.

[89] The wrought iron beams uncovered in the Treasury Building are about seven inches. There are no twelve inch beams detected in the south or west wings, although the north wing does use paired twelve inch beams above the Cash Room (c.1867-69). Bowman had thought these larger beams might be able to replace the "more expensive girders now used."

in Portland, Maine. The building had been considered “strictly fire proof” but was irreparably damaged by a conflagration in the city and had to be completely rebuilt. This incident proved to Mullett that stone and iron structures, “however carefully constructed” offered little to no resistance against a major fire.[90] He suggested that due to this observation, “all government buildings should be isolated by wide streets or open spaces.”[91] Mullett advised that the selection and purchase of building sites be made with regard to “architectural necessities”, and not dictated by local preferences as was currently the case.

A report dated July 19, 1893 written by Adolf Cluss[92], a building inspector hired by the Treasury, assessed the structural strength of the south wing with regard to the characteristics of the wrought iron beams. He stated that the safe strength of the beams was based upon 16,000 fibre strain per sectional square inch. He claimed that the beams of the 1850's and 1860's were stronger that beams used in the 1890's which had a safe strength of 12,000. He stated that permanent deflection will not occur before the load of 25,000 pounds was reached and breakage would not occur until loads reached 50,000. The rooms facing the courtyard had been laid out with about 25% more strength than the front room. Cluss felt that this was the case because these rooms were intended to house heavy file cases.

Cluss went on to describe that the floor beams had not been protected against fire in the most current methods. Following the Chicago fire of 1871, laws and building codes were enacted to insure buildings were constructed with floor beams whose lower flange was protected with non conducting fireproof material.

Impact of the Civil War on the Construction of the Treasury Extension

Though the Civil War started in 1861 and ended in 1865, the growing unrest between the north and the south affected the construction of the Treasury Extension, especially in the

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[90] In “Rethinking Cast Iron Columns”, Building Renovation, Winter, 1995, Sara Wermiel stated that cast iron fell out of favor among architects and engineers starting in the 1860's and especially after the Chicago fire in 1871. An architect studying the Chicago fire’s ruins claimed that cast iron shattered from heat. As a result of the conflagration, cast iron’s fire resistive properties were in doubt. According to Wermiel, these claims are not accurate for cast iron. She cited studies done in the late nineteenth Century which showed cast iron performing better than steel or wrought iron in high temperatures.

[91] Report of the Secretary of the Treasury on the State of Finances for the Year 1866 (Washington, DC: Government Printing Office, 1866) p.189.

[92] Cluss was the architect of several prominent structures in Washington, DC including Eastern Market, the Sumner School, and the Arts and Industries Building at the Smithsonian, built in conjunction with Paul Schulze.

economic sense. A nationwide financial downturn in 1858 might have affected the decision making of Alexander Hamilton Bowman and Ammi Young when it came to choosing materials and designing details. Correspondence from that period often focused on trying to save money by using less expensive materials. For example, a series of letters between Bowman and an assistant reviewed the various choices of building materials for roofing. Bowman was continually concerned with finding the lowest costs for the roofing of the south wing. A specific type of slate was finally chosen, and although it was clear that Bowman felt the integrity of the building was maintained, this material did not fare well and had to be replaced a few short years after it was first installed.

In 1859, Congress decided not to appropriate any new funds for the Treasury Extension. Whether this decision was made as a result of the tensions between the north and the south, and the apprehension of war caused Congress to save its money is not clear. However, this lack of funding did have an affect upon the schedule of construction. The progress of the west wing was seriously impeded without that appropriation and its construction more or less came to a halt. Bowman and Young decided to focus their attention on completing the south wing, but even this was difficult to do. In the report to the Secretary in 1860, Bowman complained that important offices for the Secretary and the First Auditor could not be occupied since there was no money appropriated to pay for furnishing.

A second major alteration to the design of the south wing was made late in 1858 and carried out in 1859. In order to save $19,000 in materials, the design of the south portico was changed. The inner four granite columns at the upper landing were eliminated from the original design. To carry the extra loads, iron was incorporated into the ceiling, replacing the granite beams as structural elements. Cast iron was used instead of granite and painted to resemble the more expensive stone.

Again in 1860, Congress chose to limit appropriations made to the Treasury Extension allotting only enough funding to complete the south wing. Work on the west wing was suspended. In his Report to the Secretary of the Treasury in 1861, the Acting Engineer-in- Charge, S.M Clark stated that due to the Civil War, construction activities were largely put on hold. And in April of 1861, when the Civil War started, the Union government made an immediate decision to protect the major public buildings in Washington from Confederate attack. According to Frank Leslie's Illustrated Newspaper from 1861, it was deemed advisable to put the public buildings in Washington in a state that could resist attack . As a result the Treasury Building was barricaded in order to resist against storming troops. In the entrance story or second floor corridors, planking was placed across the entrances to the building. Massive beams were placed across the corridor to add greater strength to the planking. Four floor lights were removed from the second floor ceiling and four columns were extended through them.

In the Treasury Building records of 1861 there was a special expenditure list for the Treasury Extension from April 17, 1861 to Jan 1, 1862. This list identified the expenditures that related to accommodating the troops at the Treasury, for the surveying

of fortifications, and for the entrenchments for the defense of Washington. During this time at the Treasury, many tasks related to securing the building against were performed. Between April and May, 1861, the south wing was barricaded with sandbags on the exterior and and lumber on the interior. Gun racks and 8000 feet of corn culls were constructed. On May 6, 1861, dough troughs, tables, a flue for a kitchen were constructed and mess room was established and fitted with gas fixtures and water pipes. Blacksmiths made cooking utensils. A sketch from Harpers Weekly, May 25, 1861, showed wood lean-to structures against the east and center wing located in the south courtyard. Kitchen facilities were pictured along with wooden benches set up with men eating.

According to the expenditure list, periodically between April 1861 and January , 1862, a Captain Palmer, the officer in charge of the Massachusetts regiment stationed at the Treasury, ordered that carpenters work on enclosing rooms in the basement of the building to be used for prison cells. It was not clear who these prison cells were constructed for, perhaps for his own unruly troops. The troops may have very well been bored waiting for attacks that never materialized. Attesting to the restless nature of the Union troops, a second document dating from June 1861 described the "glass required to repair damages done by volunteers." Between April and June, 21 window panes, 5 hall floor lights and 4 skylights were broken and then replaced.

Between September 30, 1861 to February 1862, all work was officially suspended. Work on the west wing did not resume until September on 1862. Even after work on the west wing recommenced in 1862, there were certain obstacles due to the Civil War that hindered the progress of the construction. Transportation of materials from one point to another was one problem as illustrated in a June 23, 1862 letter from Brig. Gen. Montgomery Meigs to S.M. Clark. Meigs wrote Clark, the Acting Engineer in Charge of Treasury telling him it was impossible for him to have his granite delivered to the wharf at the foot of C St.. because of "the present condition of affairs." The wharf at that time must have been occupied with Union troops protecting against potential attacks from the south along the Potomac. A second letter to Clark from D.H. Rucker, Quartermaster, asked that the contractors that were delivering the granite, let the stone off at the Navy Yard instead of the 14th St. wharf.

Curfews appeared to be another issue that had to be contended with during the Civil War. On September 16, 1862, Isaiah Rogers, the new Supervising Architect, wrote Secretary of the Treasury, Salmon Chase and requested that work on the west wing be allowed to be done after 4 o'clock in the afternoon. According to Military Authority, this was not allowed. Rogers asked Chase to extend the hours of construction or completion of the west wing would be seriously retarded. It is not known whether Chase took any action.

However, Chase was also concerned with completing the west wing in a timely manner. In a letter from marble supplier, Henry Parry to Secretary Chase, Parry responded Chase's concern for the fact that the Secretary felt that he had taken too long to complete the job of tiling the floor in the west wing. When explaining the delay, Parry recalled "the

memorable months of June and July, 1863 when in consequence of the invasion of Pennsylvania, and the subsequent drafts, the riots in New York, work was suspended for a time....” The unforseen events of June and July, 1863, that were beyond his control, as Parry described in his letter, were the Battle of Gettysburg and its repercussions.

The west wing was finally completed in 1864. Though Rogers was hopeful that construction of the north wing would commence, it did not until 1867, well after war and the subsequent celebrations in the north were over.

Construction of the Treasury Extension

A series of public documents called “Reports of the Secretary of the Treasury on the State of Finances” was issued yearly starting in 1853. These reports to Congress included general descriptions of the work that was done during the year on the on all buildings constructed by the Treasury Department including the Treasury Extension. The reports also described the money that was spent to do the work, and the money that would be needed to be appropriated for construction to continue into the next year. From 1853 to 1859, Alexander Hamilton Bowman issued these reports. In this way, an increased level of accountability, which had been lacking prior to the formation of the Office of Construction, was brought to government building projects. The following sections outline the information documented in these reports on a year to year basis from 1855-1866.

1855

In the 1855 Report, Bowman mentioned that a $300,000 appropriation was made by Congress (the actual date Congress passed the appropriation was March 3, 1855) for the extension of the Treasury, however the preparation of the details of the plan prevented work from starting until July.[93] Thomas U. Walter’s plan and elevations of the Treasury Extension were conceptual in nature; they lacked the detail required for construction of this complex structure. Ammi Young and his staff had to take Walter’s plans and develop them into construction documents.

The South Wing was the first part of the extension to be built. The first task was to prepare the site, and on July 16th, the excavation of the cellar was started. Although it would have been possible at this point in the nineteenth century to excavate using steam powered machinery, it does not appear that this method was employed.[94]

This work was contracted to a Henry Cassidy of Washington, DC. His responsibilities.

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[93] Report of the Secretary of the Treasury on the State of Finances for the Year 1855 (Washington, DC: Government Printing Office, 1856) p.232.

[94] Robert M Vogel, “Building in the Age of Steam,” from Building Early America, Charles E Peterson, editor (Radnor, Pa: Chilton Book Co., 1976) pp 127-133.

according to the specification, were to excavate the basement, including footings of the new Treasury Extension and to remove the earth to points not exceeding 300 yards.[95] Excavation of the site probably started on the southeast portion of the site, adjacent to the existing east wing, and proceeded westward. This work took more than three months and was completed on October 23 after 10,879 yards of earth were removed.[96]

The stone for the cellar walls and foundation was ordered on August 25. H. O'Neil, of Georgetown, was the supplier of the rough stone. His contract with the Treasury specified that stone was to come from two sources. A better quality stone to be used for cubic blocks, faced and jointed ashlar, and fine cut ashlar was to come from quarries in Port Deposit, Maryland. The rough stone needed for the concrete foundations was to come from quarries in Little Falls, Virginia.[97] Concrete work for the foundations at the south wing commenced on October 4, before the excavation of the site was complete. The delivery of rough stone was necessary for the laying of the concrete foundations to begin. O'Neil was responsible for getting the stone from quarries in Little Falls to wharves located at 14th Street. The concrete work was completed with an exception of a small quantity on November 5, 1855. The total amount of concrete work that was done amounted to 1661 cubic yards.[98]

Bowman continued to describe in his report that the granite work for the basement started on the 27th of October. The cut stone of the superstructure (that part of the building that was built atop the foundations) had been awarded to Beales and Dixon, of Dix Island, Maine on October 10, 1855.[99] The contract stated the whole of the cut stone had to be delivered by or before October 1, 1857.

On June 26, 1855, the Treasury Department issued an advertisement for proposals for stone. In this proposal, each item involving the stone work required for the superstructure was itemized. Bowman did this to insure that the costs associated with materials and labor were clearly outlined. He clearly understood the complexities of the building process and was insuring that the Treasury Department was not wasting any money. The

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[95] 34th Congress, 1st Session, House Report 96, Treasury Extension - Contracts for Materials Etc., p.96

[96] Report of the Secretary of the Treasury on the State of Finances for the Year 1855 (Washington, DC: Government Printing Office, 1856) p.232.

[97] 34th Congress, 1st Session, House Report 96, Treasury Extension - Contracts for Materials Etc., pp. 94-5

[98] Report of the Secretary of the Treasury on the State of Finances for the Year 1855 (Washington, DC: Government Printing Office, 1856) p.232.

[99] 34th Congress, 1st Session, House Report 96, Treasury Extension - Contracts for Materials Etc., pp. 90-93.

proposal described exactly what was required of the contractors from the smallest item such as hammering mouldings, bevels and curves, to costs for larger items such as the columns. The advertisement called for bids for both granite or marble. Beals and Dixon Co. was awarded the contract for two reasons; they were the lowest bid of the fourteen estimates received and in their description of work, they were "specific in every particular."[100]

In 1855, Bowman wrote to Secretary Guthrie that Beals and Dixon had already started the work with a large work force. Bowman thought that they would be able to meet the terms of their contract before schedule. He predicted that laying the masonry for the basement would be completed, depending upon the weather, by the time the first shipments of the granite superstructure were received. Bowman went on to ask Congress for an additional $400,000 to be appropriated for the continuance of work on the Treasury Extension.[101]

1856

Bowman's Report of 1856 mentioned encountering problems in "procuring a sufficient supply of granite and other materials coming from abroad."[102] Apparently the rivers from which the granite was being transported including the Potomac River were iced over. Bowman mentioned that machinery had to be prepared and this also caused delay. This could be referring to four small mason's derricks and three boom derricks.[103] Extension boom derricks would be used to raise the granite material from the ground to their correct place in the building .

Even with all these delays, by September 30, 1856, the basement and the retaining walls around the moat areas of the south extension were completed. Basement walls were completely constructed of granite (without the brick backing used at the exterior walls of the upper floors). The use of clay masonry at this level was limited to the groin and barrel vaulted ceilings. This type of construction at the basement level of the south and west wings was similar to that used in all floors of the Mills wings. Interior brick arches had been turned for the first floor, and the exterior ashlar, also at the first floor, had been

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[100] 34th Congress, 1st Session, House Report 96, Treasury Extension - Contracts for Materials Etc., p.3.

[101] Report of the Secretary of the Treasury on the State of Finances for the Year 1855 (Washington, DC: Government Printing Office, 1856) p.233.

[102] Report of the Secretary of the Treasury on the State of Finances for the Year 1856 (Washington, DC: Government Printing Office, 1856) p.569. The granite was from Dix Island, ME, but marble for fireplace mantles as well as some portion of the South Portico flooring was specified as Italian marble in letters and receipts of the time.

[103] 34th Congress, 1st Session, House Report 96, Treasury Extension - Contracts for Materials Etc., p.97.

completed to the belt course. Ashlar was purposefully left out of place in areas where heavy columns were to be placed in order to avoid damaging the exterior face of the building. Above the basement level, exterior walls began to be constructed using granite blocks for the exterior face backed with brick on the interior face. The brick backing of the first floor walls was completed to the height for receiving the iron beams. The brick partitions (corridors walls and room partition walls) were raised to this same level. Bowman reported that Beals and Dixon had shipped a large supply of cut granite to be used on the work of the upper stories of the South Wing.

1857

Bowman's " Report to the Secretary of the Treasury" in 1857 detailed a great variety of work that was accomplished on the south and west wings. Excavation of cellars and foundations of the west front and west end of the south wing was completed. Next, the concrete foundations for the west front, area walls of the west front, and west end of south front was completed. Once this had been accomplished, foundations were ready for granite. [104]

Apparently, work was behind schedule. Bowman wrote that there had been an unusually wet spring and that work would start as soon as the weather would allow. To make up the lost time, Bowman made the decision to proceed with construction of foundations and walls on the south wing in the winter months. While he understood the risk of winter frost damaging concrete and masonry, Bowman reported that work carried out in the winter was protected from the elements and that the quality of the work was good.

Bowman continued to explain that the cellar walls and area walls of the west front were begun in early spring. However, another source of delay came from the fact that stone for the walls could not be furnished as quickly as necessary. Bowman wrote that "quarry men" from Dix Island, Maine had difficulty supplying the number of uniformly large sized stones required at the cellar walls. Even with this setback, the cellar walls for the entire portion of the west wing were completed with the exception of the cellar walls under the west steps. Brick arches were turned for the first floor, and the granite area walls of the west front and north end of the west wing were in place.

During this year, the south wing began to take form. Aspects of work that were completed included the laying of the ashlar to the belt course. The ashlar was backed with brick and carried up to the point where it would receive the iron beams. The iron beams were set in place, and the masonry arches consisting of one width of brick that supported the second floor were turned. At the east portion of the south wing, the interior granite stairways from the basement to the second floor were constructed. The granite columns for the

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[104] Report of the Secretary of the Treasury on the State of Finances for the Year 1857 (Washington, DC: Government Printing Office, 1858) p.120.

south portico and the granite caps[105] and lintels for the doorways of the first floor under the portico had been laid and masonry arches that supported the stone floor of the south portico were turned. Bowman wrote that all the arches were covered with asphaltum[106] Remnants of this material are apparent today[107] and it appeared to by applied to a thickness of about one inch. Once the arches were coated with this water repellant material, Bowman began plastering the interior faces of the walls of the first floor rooms. Cast iron door and window frames were set and fitted in the basement and first floor and glazed window sashes were put in place. Enough of the cast iron columns, antae,[108] and architraves for the second floor were delivered so that the ashlar and brick work in the southeast corner could be covered with brick arches and enclosed. Once enclosed, those rooms were immediately occupied by Bowman's staff and functioned as offices for draughtsmen and clerks.[109]

Bowman stated that the antae for the east end of the south wing had been raised and successfully set into place. He anticipated Beals and Dixon's delivery of the granite antae for the west end of the south wing. Depending upon the weather, he felt that the granite infill to be placed between the antae would be lifted into place by December, 1857.

According to the set of construction photographs[110], by August, 1857, at least one of the

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[105] Dictionary of Building Preservation, edited by Ward Bucher (New York: John Wiley and Sons, Inc., 1996), p.80. A cap is defined as a "molding or projection, that covers or forms the top of an architectural feature, including a door entablature or lintel." Bowman wrote about the the caps along with the door lintels so that this cap probably referred to _____. In other contexts, caps could be referring to capitals for antae and columns. Any reference to buttress caps refered to those solid blocks of granite that cover the landings at either side of the south portico stairs.

[106] Joseph Gwilt, The Encyclopedia of Architecture, (New York: Crown Publishers, 1982), p.542. Asphaltum was formed by the mixture of chalk, lime and gas tar, and was traditionally used to coat vaults or walls exposed to the dampness of earth.

[107] In 1998, when the granite steps were removed from the front of the west portico in order to waterproof the brick arch that supports the steps, evidence of the asphaltum used to coat the brick arch was noted.

[108] An anta (plural is antae) is a square or rectangular pier in a wall, similar to a.

[109]Report of the Secretary of the Treasury on the State of Finances for the Year 1857 (Washington, DC: Government Printing Office, 1858) pp.121.

[110]A series of photographs taken by Lewis Walker traced the construction of the Treasury Extension dating from the 1857. Many of the photos were dated and they helped provide a graphic representation to the work described in the annual reports. These photographs showed that materials were placed to the south and west of the building site along

squared granite antae at the east facing portico of the south wing was lifted into place by one of the boom derricks placed on Fifteenth Street. The construction site used several boom derricks when necessary and it was not uncommon to have three or four boom derricks in use during the course of construction. By November 9, the antae for the east end of the south wing had been set and the infill panels forming the second floor windows were in place. Granite belt courses marking the third floor placed atop the window openings can be seen in the photo as well. Bowman was overly optimistic about the placing of the antae at the west side as photos show this work was not completed until early 1858.

Photographs dated from July to December, 1857 showed that construction of the west wing had started, boom cranes had been built and that the work focused on the basement level. The granite for the corridor and exterior walls at the basement level largely was in place and brick arches had been turned for the corridor ceiling by December 1.

Bowman had to make sure that materials were delivered in a timely manner so that work could progress on schedule. He stated that the cast iron columns and antae for first floor interior at the west front had been delivered as had the wrought iron beams for the rest of the south wing. The cut granite for the basement of the west front, upper stories of the south wing had been delivered along with the rough stone for the cellar walls for the west wing. Bowman stated that the south wing work should be pushed forth aggressively so that its the walls and roof could be completed before the winter of 1858 and 1859. He was hopeful that the work on the west front could be done simultaneously in order to complete the cellars and basement story of that wing by that time.

At the time of the 1857 report, $1.2 million dollars had been appropriated for the construction of the Treasury Extension, but less than half that amount had been spent. Still, Bowman requested another $375,000 and suggested that this amount was necessary to make sure that sufficient quantities of stone be delivered to the site.[111]

1858

In 1858, the construction continued to focus on the south wing as work moved from east to west. By the end of the year, the construction photographs showed that the exterior

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Pennsylvania Ave and south of the White House grounds (See Plate II-54). Adjacent to the materials, photos showed temporary structures required by Bowman including an inspector's office, a time office, cement house, riggers room, carpenter's shop, a stone shed, engine house and a stable. Specifications called for stables to be built because animal power was necessary for the construction process during this period of the mid nineteenth century.

[111] Report of the Secretary of the Treasury on the State of Finances for the Year 1857 (Washington, DC: Government Printing Office, 1858) pp.122.

portion of the south wing was almost totally completed, except for the south portico.

Bowman's report reflected a level of competence that had been achieved in the construction of the Treasury Extension. He stated that in 1858, fifty one of the thirty three foot, five inch monolithic granite columns and antae were delivered to the building site; forty seven were set into place. Bowman was pleased to report that the hoisting, handling and laying of these stones, some of which weighing 33 tons resulted in no accidents. He went on to state that more than 8000 tons of granite, 1.5 million bricks and 1.25 million pounds of cast and wrought iron were delivered to the site. Materials used in construction for the year included 1,100 tons of granite, 1.6 million bricks and 1 million pounds of wrought and cast iron. He stated that the relationship between the production of materials and their use in construction was thoroughly organized so that materials could be procured as rapidly as they were being used.[112]

According the Bowman's annual report of 1858, on the interior all the floors of the south wing were arched in. Iron columns, antae and architraves were placed in the corridor walls as the masonry walls were carried up. The cast iron windows and doors were set in place up to the second floor and workmen continued to install these elements as each floor took form. By the end of 1858, the first floor was probably ready to be occupied as the walls had been plastered, painted and heating pipes installed. The room which contained the large columns under the portico had iron cases installed that extended floor to ceiling. These cases according to Bowman covered half the area of the room and were designed for the preservation of important documents.[113] The protection of paper documents against fire was one of the important goals voiced by Congress beginning in the 1830's.

As far as the exterior work was concerned, Bowman reported that the pediment on the east front of the south wing was nearly finished and he thought that this work would be completely done the following year. The entablature on the south front was largely constructed throughout the entire wing and all the large antae and columns at the west facing south wing portico were in place. Antae had begun to be placed along the facade of the west wing. Also at the west wing, the cellar walls were carried up, arches turned, and the thick rough granite block walls of basement had gone up.

Roofing was nearly completed over the east section of the south wing. Like the floors, the roof structure was also constructed of iron beams and masonry arches, designed to be fireproof. Masons had begun turning the arches for the roof and Bowman felt that if weather permitted, one third of the wing would be roofed in and the rest would be

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[112] Report of the Secretary of the Treasury on the State of Finances for the Year 1858 (Washington, DC: Government Printing Office, 1858) pp.

[113] An order to Hayward Bartlett and Co was made on July 31, 1858 for 8 iron book cases. The Treasury was charged by the pound and the total charge was $7000, seven cents a pound for 100,000 pounds. That meant that each of these book cases weighed 12,500 pounds each.

completed in the following year, 1859. Apparently, Bowman had placed a member of his staff, Major Edward French, the Assistant Superintendent, in charge of investigating roofing materials for the Treasury Extension. The decision between the use of cast iron roofing plates or slate tiles had not been made by the middle of 1858. French sent out several letters in June and July, 1858 to companies specializing in the manufacturing of slate and cast iron asking for estimates for roofing tiles. French asked for prices for slate "from ½ to 1 inch thick, unplaned and for slabs planed on one side per superficial foot...intended for covering a roof made of masonry arches... and they can therefore be of large size."[114] French also sent a letter to James Beebe and Co. asking about the use of "cast iron roofing plates, not exceeding 3/8 inch in thickness."[115]

Bowman must have asked French to investigate the cost of 1/4 inch slate tiles because in a letter to Bowman, French stated that the difference in cost between 24" by 18" slate tiles of ½ inch thickness as compared to 1/4 inch thickness was only 5 cents. French went on to advocate the use of the thicker material in lieu of monetary savings because of the "advantages of increased weight in resisting the lifting action of high winds, the increased strength to stand against hail stones... the better joint it will make with asphaltum and the less liability to expansion and contraction by sudden changes in temperature."[116]

The downturn in the economy in 1858 must have forced Bowman to consider every means to keep costs down. In a letter from French to Bowman, the Assistant Supervisor acknowledged that iron roofing plates "will be easily and cheaply laid," but he feared that "there would be a rapid oxidation along the extensive line of curved joints." French was obviously not in favor of the use of cast iron plates for roofing though he kept an open mind stating "the iron plates may have some advantages, that I do not now perceive."[117] French finally persuaded Bowman for in a letter from Wilkes Barre, PA, Bowman stated that he preferred the ½" slate to iron.[118] A bill dated November 30, 1858 stated that 6133 pieces of slate, or 18,388 square feet of tile, were ordered from Robert McDowell. [119]

Photographs from 1858 showed that work continued to progress slowly at the west wing. The construction was still limited to work at the basement level. By May 1, 1858, arches had been turned over many of the spaces at the basement level. The hexagonal piers in the

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[114] Letter from Major E French to E.A. Billings, Agent Hydeville Slate Co., 6/17/58.

[115] Letter from Major E French to James Beebe and Co., 6/17/58.

[116] Letter from Major E French to Major A Bowman, 7/7/58

[117] Letter from Major E French to Major A. Bowman, 7/9/58

[118] Letter from Major A. Bowman to Major E French, 7/12/58

[119] Receipt of Appropriation for the Extension of the Treasury Building to Robert McDowell dated November 30, 1858.

central portion under the portico had been set in place by August. In September, the exterior courtyard walls had begun with the granite facing blocks laid in place. The brick backing of these wall had begun also. By October, the northwest basement stairs had taken shape. Ceilings of basement corridors and rooms had been completed to these stairs. By November 18, the west exterior first floor wall had been started and was well defined with window openings at the south portion of the wing. Twelve large cylindrical columns in the central portion of the first floor had been placed, awaiting their torus moulded capitals. The square cast iron flues were placed in their corridor wall locations prior to the infilling of the corridor walls with brick.

At the time of the report $1.7 million dollars had been appropriated for the construction of the Treasury extension and close to $1.2 million was spent. Bowman requested another $500,000 for the next fiscal year.

1859

In 1859, Congress temporarily suspended funding for the construction. Fortunately, there was $204,901 available from previous appropriations. Congress added $50,000 for preserving the work but this money was not intended to be used to continue construction work. Bowman wrote that the money remaining would be used up in finishing the south wing and had in fact been instructed by Howell Cobb, the Secretary of the Treasury, to do just that at the expense of continuing work on the west wing.[120]

This suspension of funding led to some contractual disputes between Beals and Dixon. The granite continued to be quarried and some was delivered to the site, but since Congress did not approve Bowman's previous request for appropriations, Beals and Dixon were not being paid.[121] In addition, building materials were being left unused on site. Almost all the granite for the west wing as well as a portion for the north wing was quarried, cut and delivered. Bowman described that the dormant materials were subjected to injury by vandals even though a watchman had been hired to guard them.

Despite the lack of funding, a great deal of work did take place in 1859. Bowman wrote that in the year alone, 2,700 tons of granite, 1,175,000 bricks and 637,000 pounds of wrought and cast iron were used at the Treasury. Bowman, however, used this report not so much to describe the work that was done on the Treasury Extension during the year, but to advocate the importance of appropriating funds for the continuing the construction. Bowman made persuasive arguments for approving the next appropriation request by stating that he has gathered a large trained work force and claimed that it was in the government's best interest to maintain this workforce. If Congress did not continue funding, it was his experience that the workforce would be disbanded and it would be

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[121] Letters from Alexander Bowman to Beals and Dixon, dated February 19, 1859 and March 17, 1859.

virtually impossible to reassemble the same crew or to assemble a crew matching their existing skill level. Bowman had already had to compete for a labor force with Capt. Montgomery Meigs and Thomas U. Walter who were assembling a crew to work on the US Capitol.[122] To train a new work force would take time and require considerable expense.

The best source for tracing the work that was done in 1859 comes from the construction photographs. A photograph dated January 3, 1859 showed that most of the granite work was completed on the south wing. Work at this point focused on the south portico. Window frames and sash had begun to be placed up to the second floor or entrance story by February. The southwest portico had been completed, however the roofing over the southwest area of the building was not yet finished. The exterior walls on the first floor level of the west wing were laid and floor arches over the southern part were in place. Through March, work continued to be concentrated about the south portico as two columns along the building face had been placed and the entablature set atop these columns. By April 20, each of the bases for the columns supporting the pediment had been set. While this was being done, the brick vaulting of the portico ceiling commenced. Iron was used was used for structural and decorative purposes for the South Portico ceiling.[123] Construction drawings indicated the use of wrought iron structural beams at the arched ceiling under the pediment. Written reports also refer to the use of cast iron for ornamental elements of the south portico ceiling.[124] Photographs dated June 6 to July 1, showed the outer rows of columns being set into place. The bases of the portico's outer columns were wrapped in protective wooden forms so that when the boom raised each successive granite column into place, the granite bases were protected. The July photo showed that window sash was in place up to the third floor on the eastern half of the wing. By September 1, all the outer columns of the south portico were in place, the entablature over the columns nearly finished and the pediment had begun to take shape. The granite openings on the east and west side of the carriageway under the south portico were being built. And in less than two weeks, the pediment was almost completed.

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[123] The original design at this portico ceiling was intended to be carried out completely in granite. Granite beams were to span between large granite columns. In fact, there were to be an additional four granite columns at the upper landing of the south portico. As a means of saving money, Secretary Chase approved the design to eliminate the four interior columns and to replace the granite beams with iron beams. The iron beams were covered with decorative cast iron plates. The cast iron was then painted to resemble granite.

[124] Report of Operations at Treasury Extension for the Month of April 1860, written May 1, 1860, described the crew of five machinists fitting iron to the ceiling of the South Portico and the Report of Operations at Treasury Extension for the Month of May 1860, written June 1, 1860, described fitting iron "ornament" in the South Portico. These reports can be found at the National Archives, Record Group 1, Box 1434, as well as at the Office of the Curator at the Treasury.

Photos confirmed that work on the west wing lagged behind the south wing. By January 12, the exterior wall of the center portion of the first floor was completed and the bases for the exterior antae at the southern portion of the west wing building were visible.

Bowman requested a $1 million appropriation for the continuance of the Treasury Extension.

1860

The 1860 Report to the Secretary of the Treasury was prepared by S.M. Clark, the acting Engineer in Charge. In 1860, the construction continued to focus on the south wing. Work on the west wing was held up since Congress only appropriated $350,000 to complete the work on the south wing and its approaches.[125]

A major unexpected expense occurred due to the reroofing costs. Over the past year, the roof that Bowman and French had chosen had been experiencing leaks. These leaks had resulted in the in the deterioration of interior plaster. The project to reroof had begun in 1861 but was not yet completed.

Much of the work this year appeared to focus on finishing the interior. Marble mantels and fireplaces and lighting fixtures were ordered, corridors walls were painted at least up to the entrance level, and the stair balusters, rails and newel posts were installed. Clark indicated that several offices had begun to be occupied including those for the Attorney General and his staff were located in the southeast portion of the second floor. Other offices for the Secretary of the Treasury and for the First Auditor were ready for occupation, but since money for furnishings had not been appropriated, they could not move into these offices.

All of the granite work for the South Wing had been carried out with the exception of the steps and buttresses of the east casement door[126] as well as the buttress caps of the South Portico. Pointing all the joints and cleaning of the granite occurred on this facade as well. The marble flooring of the South Portico upper landing had been designed and a contractor had been chosen. Correspondence between the Treasury and Henry Parry, the contractor chosen to provide and lay the marble, shed some insight into this portion of the building.[127] The marble in this area was two inch black and white Italian marble and "verd antique marble." Mr Parry suggested in a letter to Mr. Clark that the marble be laid "entirely with Plaster Paris, tempering it, with a sufficient quantity of fresh lime and

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[125] Report of the Secretary of the Treasury on the State of Finances for the Year 1860 (Washington, DC: Government Printing Office, 18) pp.

[126] This may have been referring to the entrance at the east facade of the south wing.

[127] Receipt of Appropriation for the Extension of the Treasury Building to Henry Parry dated October 11 , 1860.

sand."[128] Parry suggested this method "instead of asphalt, for the coating of underside of tiles" as Clark had earlier indicated.[129] Clark suggested coating the underside of the tile with asphalt or mineral tar because he thought that "will entirely prevent any discoloration of the marble from the mortar in which it is to be laid." Parry had suggested the other method because it was one with which he was familiar and it was being used on similar jobs in New York. Other work at the south portico focused on the ceiling which was plastered, painted, sanded and granitized.[130]

In 1860, designs for the grounds, fences and approaches to the south of the Treasury Extension were drawn up and approved by President James Buchanan. Included in these designs were the designs for proper entrances to the Treasury, The White House and the President's Park to the south of these buildings..

The support facilities for the construction of the south wing of the Treasury Extension including the offices and shops were relocated from the south grounds to a different location in order to serve the construction of the West Wing. The President's greenhouse, which was sited to the east of the White House had to be moved as well.

In 1860, 424 tons of granite, 261,134 bricks and 288,015 pounds of wrought and cast iron were used on the Treasury Extension. The total amount that Congress had appropriated for the project was $2.1 million, while the amount used by September 30, 1860 was nearly $1.8 million. Clark requested an additional $500,000 to be appropriated for the next year.

1861

The Report to the Secretary of the Treasury, Salmon P. Chase, was again prepared by S.M. Clark, the acting Engineer in Charge.[131] According to Clark's account, building construction activities were curtailed, in large part due to the Civil War. As a result, the completion of the west wing extension was delayed. Salmon Chase had in fact instructed Clark to limit work on this wing only "to the most economical expenditure." Clark wrote that he followed Chase's direction, however he also noted that there was a lack of space and that "the necessity for the additional room of the west wing is now a daily hindrance

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[128] Letter from Henry Parry to S.M. Clark dated June 13, 1860.

[129] Letter from Henry Parry to S.M. Clark dated June 6, 1860.

[130] According to D.S. McDannell, The Practical Painter and Instructor (Chicago: Church, Goodman and Donnelly, Publishers, 1868) pp. 82-83, granitizing is a type of faux painting whereby a painted surface is made to imitate fine grained granite. This was done at the south portico of the Treasury where cast iron elements such as beams and skylight frames were used.

[131] Report of the Secretary of the Treasury on the State of Finances for the Year 1861 (Washington, DC: Government Printing Office, 18) pp. 107-109.

to business." He also lamented the fact that building materials slated for the west wing were scattered in the streets around the site and were subject to injury.

Clark was interested in resuming work on the west wing and requested that Congress appropriate $500, 000. Realizing that money was tight due to the war, he presented two arguments for his request. He reminded Chase that the war effort had not caused the Treasury to stop growing, and that additional room "was an absolute necessity." Clark also emphasized that valuable records were accumulating and needed to be stored in fireproof areas.

Clark went on to describe the work that occurred during the past year which was limited to the cleaning the granite, securing the joints, completion of the replacement roof over the south wing, repairing the damage associated with the leakage of the previous slate roof. The marble paving at the south portico's upper landing was completed and the approaches for the south wing were nearly finished. For the interior, the only additional work was the installation of the balustrades and railings were added to the two staircases.

All the rooms from the attic to the first floor of the Treasury extension were occupied during the summer of 1860 by United States troops (See section called "Impact of the Civil War on the Construction of the Treasury Extension"). Secretary Chase also relocated his offices from the Mills wing to the southeast corner of the third floor of the South wing. Clark outfitted Chase's offices with fixtures so that they could function as offices. Clark went on to describe that his carpentry staff was being used to help build fortifications at the Potomac River, and the reallocation of his workforce must have contributed to the decrease of work on the Treasury Extension.

In 1861, 1,158 tons of granite, 499,338 bricks and 274,076 pounds of wrought and cast iron were used on the Treasury Extension. The total amount that Congress had appropriated for the project was $2.4 million, while the amount used by September 30, 1860 was nearly $2.1 million. Clark requested an additional $500,000 to be appropriated for the next year.

1862
No report issued.

1863

The Report to the Secretary of the Treasury, Salmon P. Chase, was prepared by Isaiah Rogers, the Supervising Architect.[132] The report covered the operations of the architect's office between September 30, 1862 and September 30, 1863. Rogers stated that since he had only started supervising the office on July 28, 1862, he was unable to prepare any report for 1862. In 1863, he referenced making administrative changes for reorganizing

[132] Report of the Secretary of the Treasury on the State of Finances for the Year 1863 (Washington, DC: Government Printing Office, 18) pp. 137-139.

the Office for the Supervising Architect. Changes were made in record keeping and bookkeeping, perhaps referring to the conflicts that arose due to Ammi Young's alleged improprieties.

In his report on the progress of the Treasury Extension, Rogers mentioned that work had been suspended from September 30, 1861 to February , 1862. When Rogers started his work in July, 1862, the west wing was complete only to the entrance level. Although a large amount of the cast iron and granite for the wing had been delivered, delays in shipping materials were a common occurance. Apparently the decision to construct a fifth floor along the courtyard elevations was made prior to Rogers' arrival. This had a large impact on the construction of the existing roof in place at the south wing. However, due to the unforeseeable conditions caused by the Civil War, little construction was accomplished.

Much of Rogers' attention in his new role of Supervising Architect was focused on completion and occupancy of the west wing. As of September 1864, the majority of the west wing was completed. Rogers thought the unfinished sections could be completed in a few weeks. The northwest section of the west wing, slated to contain the banking rooms and vaults of the Treasurer and the Comptroller of the Currency, was expected to be completed by the winter of 1864. Bills and receipts starting from May 25, 1863 through 1864 describe that the black and white 12" square marble tiles for the west wing corridors were ordered and being delivered.[133]

According to this report, the attic story at the south side of the west wing had been completed however, due to shortages of iron, high prices for labor and materials, as well as a general shortage of labor, the work at the attic story at the north side was incomplete. Because of the labor shortages and the general lack of funds, Rogers instituted several changes in design of the west wing that reduced costs to $60, 403. These changes included the omission of the granite balustrade, the granite stairways at the third story, granite basement architraves, rough iron wall plates for beams, rough iron window lintels, floor lights, replacement of iron window mouldings by plaster mouldings, and the change of style for mouldings which forced a reduction in the cost of plastering.[134]

According to this report, a scale model of the Treasury Building had been built. With this model, Rogers was able to outline other changes he suggested. These included widening of all areaways around the building, lowering the level of the courtyards to that of the

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[133] Contract of Henry Parry of 71 E. 22nd St, New York for Marble Tile dated May 25, 1863. According to a letter dated April 12, 1864, Parry claimed that he had completed the work of laying 18,000 sf of tiling by December 15, 1863. Other letters in early 1864 discuss that there were small parts of the job still to be completed.

[134] Rogers also outlined reductions that he foresaw that could be applied to the construction of the North Wing. He never got the opportunity to implement these ideas because he was replaced by Alfred Mullett.

basement floor, designing the north portico to be the most prominent, reconstructing the east wing facade along the lines of the rest of the building, and creating a new wide carriageway. He felt that many of the changes that he advocated would make a greater number of floors more available to the Treasury, thus responding to the demands for additional space.

Rogers requested an additional $250,000 to be appropriated for the present fiscal year and $500,000 more to be allocated towards the fiscal year ending June 30, 1865.

1864

The Report to the Secretary of the Treasury, Salmon P. Chase, once more was prepared by Isaiah Rogers, the Supervising Architect.[135] The report covered the operations of the architect's office between September 30, 1863 and September 30, 1864. Before discussing the Treasury Extension, Rogers wrote that the system of heating that employed hot air furnaces had not been successful in several of the buildings that the Treasury Department had built. However, the hot water heating system that he had installed in the Treasury Extension proved very successful.[136]

Rogers reported that all of the west, the northwest portion of the north wing and all the attic stories (south?) had been completed and were ready for occupation. Bills and receipts starting from March 19, 1864 describe that the 12" square marble tiles for the west wing corridors were being completed at the end of the corridors.[137] Even with all this additional space, there was still a shortage of office space. Apparently there were also members of the State Department that had to be housed in the Treasury Building. The decision not to start construction on the north wing was an issue that concerned Rogers as well.

Four large fire and burglar proof vaults built for the Treasurer of the United States and the Comptroller of the Currency were completed. (According to the 1863 Report, the offices of the Treasurer of the United States and the Comptroller of the Currency were located at

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[135] Report of the Secretary of the Treasury on the State of Finances for the Year 1864 (Washington, DC: Government Printing Office, 1864) pp. 152-158.

[136] For a discussion on nineteenth Century heating systems, see the article in Building Early America entitles "An Historical Sketch of Central heating: 1800-1860" by Eugene S. Ferguson.

[137] Letter from Henry Parry of 71 E. 22nd St, New York for Marble Tile to Isaiah Rogers dated March 19, 1864. The letter stated that the tiling should have been completed by January, but they ran out of black tiles. Parry ordered them from Vermont and was waiting for them however since they were working on the west portico upper landing marble tiles, these two jobs would be done as soon as the tile came in. Another problem causing delay was that the marble cutters and laborers had called a strike.

the northwest portion of the building.[138]) The vaults were two different sizes. Two of them measured 20' by 12'-11" by 13' 10" and the other two measured 18'-7" by 12'- 11" by 13'-10". The vaults had double doors, each of the doors with different locks of different patents. The cost for the vaults amounted to $62,981.88. Two were located at the second floor in the Treasurer of the United States' cashier room, and the other two were placed directly above on the third story for the Comptroller of the Currency's banking room.

The furnishing of the building continued and $66,911.53 was spent.

Rogers mentioned that he had decided not to continue the use of the granite balustrade utilized at the south wing roof to the west wing roof. He mentioned that he replaced this element on west wing (apparently granite balustrades had been placed at the west wing roof prior to Rogers term as Supervising Architect) with galvanized iron antefixae (See Plate). Rogers changed this element because he noted that there were stains at the south wing cornice. He suggested removing the granite cornice from the south wing as well.

1865

The 1865 Report to the Secretary of the Treasury, Hugh McCulloch, was prepared by Benjamin Oertly, the acting Assistant Supervising Architect.[139] The report covered the operations of the architect's office between September 30, 1864 and September 30, 1865. There was no progress on the north wing of the Treasury Extension due to the fact that no plans were drawn up for the expansion of the State Department. The State Department Building therefore continued to occupy the site of the future north wing of the Treasury. Materials for the construction of the north wing were shipped to the site in preparation of new construction. Oertly described the Treasury Building as large, but still lacking in required office space for the growing clerical staff. During that year an attic was placed over the old building and old basement rooms were remodeled and made available for offices.

Oertly requested an additional $500,000 to be appropriated for the present fiscal year.

1866

The 1866 Report to the Secretary of the Treasury, Hugh McCulloch, was prepared by Alfred Mullett, the new Supervising Architect.[140] The report covered the operations of the

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[138] Report of the Secretary of the Treasury on the State of Finances for the Year 1863 (Washington, DC: Government Printing Office, 18) p. 138.

[139] Report of the Secretary of the Treasury on the State of Finances for the Year 1865 (Washington, DC: Government Printing Office, 1865) pp. 186-188.

[140] Report of the Secretary of the Treasury on the State of Finances for the Year 1865 (Washington, DC: Government Printing Office, 1866) pp. 186-188.

architect's office between September 30, 1865 and September 30, 1866. This was the first report issued by Mullett and its tone was optimistic, and breadth, comprehensive. Similar to all the previously appointed Supervising Architects, Mullett criticized the existing state of the Office and its administration and vowed to reform the record keeping system. Mullett mentioned that many of the buildings operated by the Treasury lacked accurate floor plans so he ordered that plans be drawn up of all buildings as soon as possible. The Supervising Architect's Office also began supervising the numerous plats of real estate owned by the Treasury Department. Another new duty of the office included providing accommodations such as renting out space in existing buildings for officers of the customs.

Work on the Treasury Extension during the year was limited to the completion of the approaches, fencing and grading of the grounds. In the late fall of 1865, the approach to the west front was completed by opening up the avenue between the Executive Mansion and the Treasury. This idea met with great resistance because of the loss of trees and the intensive grading that was necessary. When completed, the road was 50 feet wide with ten foot and twelve foot wide sidewalks. It was decided that in order to reduce noise, to macadamize[141] the roadway. The road was constructed with a foundation of extra granite and bluestone paving, covered with broken granite mixed with gravel. The sidewalks were made of machine planed North River flagging. New entrance gates replaced those located at each end of the road. A wrought iron fence with a granite base was built between the avenue and grounds of the Executive Mansion with a separate carriage entrance to the south. The ground between the road and the west wing of the Treasury was laid with parterres of flowers with white marble edging and earthen walkways. The design of the fencing at the west side of the Treasury was similar to that started at the east, except the posts were made of granite instead of iron. Mullett considered that the placement of this fencing marked the completion of the south and west wing with one exception. Mullett intended to remove the cast iron balustrade that Rogers had specified for the west wing roof and to replace it with a granite one. The fountain opposite the west front was completed and Mullett considered the 40' wide element to be "the finest granite basin in the country."

The total amount of appropriations available for the Treasury extension was $56, 070, $92,810 had been repaid and $500,000 had been appropriated that year. Of the $648,881, a portion had been spent leaving a balance of $409,081 available for the next year.

1867

The 1867 Report to the Secretary of the Treasury, Hugh McCulloch, was prepared by

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[141] Macadam is an exterior paving made of bitumen cement, mixed with crushed stone. Bitumen is a hydrocarbon formed of asphalt or mineral tar. It was named for the Scottish engineer John L. Macadam (1756 - 1836).

Alfred Mullett, the new Supervising Architect.[142] The report covered the operations of the architect's office between September 30, 1866 and September 30, 1867.

This report focused in large part on the construction of the north wing of the Treasury Extension, however Mullett discussed his views regarding the design of the other wings as well as his intentions for making changes to those wings. He mentioned that many of the changes he made in the north wing, were done in an attempt to correct "the many errors that marred its harmony." Mullett constructed the portico ceiling of the north wing in granite, "instead of cast iron work painted in imitation of that material as in the other porticoes, a devise unworthy of so noble and costly a structure." Mullett also did not approve of the use of galvinized iron acroteria at the west wing roof that Isaiah Rogers placed instead of the granite balustrade.

According to Mullett, the air for heating and ventilating the south wing passed through an air duct directly over a sewer. This caused the air to become unpleasant as it was distributed throughout the wing. In the north wing, Mullett redesigned the system so that are intake came directly from the exterior.

Mullett did begin to make alterations to the site around the south wing including removing and replacing some fencing along Fifteenth Street.

1868

The 1868 Report to the Secretary of the Treasury, Hugh McCulloch, was prepared by Alfred Mullett, the Supervising Architect.[143] The report covered the operations of the architect's office between September 30, 1867 and September 30, 1868.
As in his report from 1867, Mullett discussed his views regarding the design of the other wings as well as his intentions for making changes to those wings. Since he considered the height of the balustrade designed by Robert Mills on the east wing to be of "excessive height," he removed its sub-base and lowered its height. As a result, the existing balustrade at the south wing had to be lowered as well. The gutters which apparently were leaking, were repaired at this area as well. Mullett also mentioned that he removed the galvinized iron acroteria placed on the west wing roof by his predecessor, Isaiah Rogers. and replaced them with a granite balustrade. Mullett felt that the acroteria " had disfigured and disgraced the grand western front of the building.

There were several other elements of the south and west wings' design that disturbed Mullett. The Supervising Architect took a particular disliking to the west wing skylights calling them "an unsightly protuberance over the west front, generally supposed to be a

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[142] Report of the Secretary of the Treasury on the State of Finances for the Year 1867 (Washington, DC: Government Printing Office, 1868) pp. 168-173.

[143] Report of the Secretary of the Treasury on the State of Finances for the Year 1868 (Washington, DC: Government Printing Office, 1868) pp. 183-186.

shot proof turret on the 'monitor' principle erected for the defense of the building." He also mentioned that the driveway and the areaway along the west wing should be "dispensed with" because its "enormous area" "destroy[ed] the proportions of the western front" in terms of its "architectural symmetry and proportion of the building." He felt the driveway's reason for being, to provide a path by which to bring fuel to the coal bins along the west retaining wall, was obsolete because he had provided an alternate method at the north wing. A third design feature Mullett objected to was the skylights at the roof of the south portico. He said that the skylights "call attention to the ingenious effect to destroy the architectural effect of the beautiful south portico by illuminating its background with a sky-light.[144]

In terms of site elements, Mullett advocated for the removal of the driveway under south portico steps, which he felt was "unnecessary and detracts so much from the architectural effect." In addition, he recommended that the fencing on either side of the driveway be removed and the landscaped area at the southeast lawn be extended. Mullett included in this report several sketches that displayed landscaping schemes around the Treasury Building. Though many of the features of the schemes were never carried out, this marks the first evidence of the plan to develop a raised central terrace at the south wing to replace the curvilinear central plaza that existed until this point.

1869

The 1869 Report to the Secretary of the Treasury, George S. Boutwell, was prepared by Alfred Mullet, the Supervising Architect.[145] The report covered the operations of the architect's office between September 30, 1868 and June 30, 1869.

Mullett had introduced a new ventilation and heating system into the north wing that differed in design as compared to the rest of the building in that. As mentioned in an earlier report[146], his system had air coming into the building directly from the exterior. Mullett stated that he began to incorporate the system of ventilation noted in the north wing into the south and west wings. [147]

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[144] Report of the Secretary of the Treasury on the State of Finances for the Year 1868 (Washington, DC: Government Printing Office, 1868) pp. 184.

[145] Report of the Secretary of the Treasury on the State of Finances for the Year 1869 (Washington, DC: Government Printing Office, 1869) pp. 193-194.

[146] Report of the Secretary of the Treasury on the State of Finances for the Year 1867 (Washington, DC: Government Printing Office, 1868)

[147]It is not clear where the exterior air was introduced into the building. There is no evidence of air intake vents of the exterior facade of the building. Exterior air intake vents were introduced into the Pension Building designed by Montgomery Meigs in 1883, fourteen years after Treasury's north wing was completed. Investigations done in 1997 at

1879

Specification for the elevators- the one at the south end was to be a passenger elevator to run from the first floor to the fifth floor, the one at the north end was to be a passenger elevator with a freight attachment to run from the first floor to the fifth floor. Hydraulic tanks were located in the fourth floor of the building. Well for the elevators were 6' x 8' encased with brick walls with a skylight overtop.

The passenger cars were intended to be constructed with the best possible manner of mahogany, with plate glass mirrors over seat on back. The seats and backs were to be upholstered with best grade leather. Top and front panels to be of ornamental plate glass. All glass was to have 1-1/4' beveled edge. Floors were to be of encaustic tile. The finish of the cabs was supposed to be equal of the best cabinet finish- probably varnished- Pottier and Stymus are mentioned to do the painting with four coats of oil and lead to the tint as approved by the Supervising Architect.

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the exterior wall of the north wing uncovered the existence of 8-10 inch chases at either side of the north facing windows. This feature was a new innovation that Mullett introduced into the Treasury Building that differed from the rest of the building where the exterior walls were solid load bearing masonry with no evidence of chases or channels.

HISTORICAL USES AND OCCUPANCIES

The South Wing was completed by 1861 and partially occupied by 1859 and 1860. Early historical documents make some reference to those occupied spaces in the south wing, however this inventory is not comprehensive. The earliest documents that make any indications of original uses and occupancies date from June 28, 1869. Architectural floor plans of the first through fourth floors for the entire building identify, in a broad manner, those divisions of the Treasury that were to occupy the south wing rooms. These architectural plans were approved by George Boutwell, Secretary of the Treasury under President Ulysses S. Grant. Six years later, in 1875, architectural plans of the south wing identify changes in the general occupancy of spaces.

Between 1875 and 1910, some architectural plans exist that contain handwritten information as to the nature and occupancy of the spaces. These plans are rough in character but they begin to identify the number of people that occupied a given space, the square footage of a space, and the type of workers in that area (for example, clerks are often mentioned).

The next accurate inventory of occupancies began in 1909 and is outlined in the York and Sawyer Report, 1910 of the United States Treasury Department. The prominent New York architectural firm was commissioned by Secretary of the Treasury, Franklin MacVeagh to report on the existing conditions of the Treasury Department from the perspective of both architectural conditions and spatial arrangements. Their goal was to more efficiently organize and utilize the space. In this report, York and Sawyer reported on the existing conditions of the building illustrated through photographs and plans. Several plans show the existing arrangements of offices and divisions while others propose plans for reassignment of space in the building. These plans are very useful in determining how the building was organized in this period. York and Sawyer's reassignment plans also offer important information as to how the occupancies changed. In some cases, the office reassignments that York and Sawyer proposed were not followed, however in large part, their suggestions were carried though.

The occupancies of the south wing are identified through the years up to 1926. Although the fifth floor roof was completed for the entire building five years earlier in 1921, the last document recording a reorganization of offices is from 1926.